SEQUENCE LISTING

<110> Wright, David A.
Voytas, Daniel F.

<120> PLANT RETROELEMENTS AND METHODS RELATED THERETO

<130> P-1065A

<140> 09/586,106
<141> 2000-06-02

<150> 60/087,125
<151> 1998-05-29

<150> 09/322,478
<151> 1999-05-28

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<211> 7
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<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 4
Met Ala Ser Arg Lys Arg Lys

1 5

<210> 5
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<220>
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atggcctccc gtaaacgcaa agctgtgccc acacccgggg aagcgtccaa ctgggactct 60
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atccttccag agaggaatgt agagcttgga ccagggatgt ttgatgagtt cctgcaggaa 180
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tggagtgttc gaggacaggt tgtgagattt gatgctgaga cgattaatga tttcctcgac 360
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cctccagacc atgatgccat cctttccgct ctgtgtactc caggggacg atttgttctg 480
aatgttgata gtgccccctg gaagctgctg cggaaggatc tgatgacgct cgcgcagaca 540
tggagtgtgc tctcttattt taaccttgca ctgacttttc acacttctga tattaatgtt 600
gacagggccc gactcaatta tggcttggtg atgaagatgg acctggacgt gggcagcctc 660
atttctcttc agatcagtca gatcgcccag tccatcactt ccaggcttgg gttcccagcg 720
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gctcctcttc catcccagca tccttctcag ccttttccc agagaccacg gcctccactt 960
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tga 1263

<210> 6
<211> 421
<212> PRT
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 6
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1 5 10 15
Asn Trp Asp Ser Ser Arg Phe Thr Phe Glu Ile Ala Trp His Arg Tyr
20 25 30
Gln Asp Ser Ile Gln Leu Arg Asn Ile Leu Pro Glu Arg Asn Val Glu
35 40 45
Leu Gly Pro Gly Met Phe Asp Glu Phe Leu Gln Glu Leu Gln Arg Leu
50 55 60
Arg Trp Asp Gln Val Leu Thr Arg Leu Pro Glu Lys Trp Ile Asp Val
65 70 75 80
Ala Leu Val Lys Glu Phe Tyr Ser Asn Leu Tyr Asp Pro Glu Asp His
85 90 95
Ser Pro Lys Phe Trp Ser Val Arg Gly Gln Val Val Arg Phe Asp Ala
100 105 110

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Glu Thr Ile Asn Asp Phe Leu Asp Thr Pro Val Ile Leu Ala Glu Gly
        115                 120                 125
Glu Asp Tyr Pro Ala Tyr Ser Gln Tyr Leu Ser Thr Pro Pro Asp His
    130                 135                 140
Asp Ala Ile Leu Ser Ala Leu Cys Thr Pro Gly Gly Arg Phe Val Leu
145                 150                 155                 160
Asn Val Asp Ser Ala Pro Trp Lys Leu Leu Arg Lys Asp Leu Met Thr
                165                 170                 175
Leu Ala Gln Thr Trp Ser Val Leu Ser Tyr Phe Asn Leu Ala Leu Thr
            180                 185                 190
Phe His Thr Ser Asp Ile Asn Val Asp Arg Ala Arg Leu Asn Tyr Gly
        195                 200                 205
Leu Val Met Lys Met Asp Leu Asp Val Gly Ser Leu Ile Ser Leu Gln
    210                 215                 220
Ile Ser Gln Ile Ala Gln Ser Ile Thr Ser Arg Leu Gly Phe Pro Ala
225                 230                 235                 240
Leu Ile Thr Thr Leu Cys Glu Ile Gln Gly Val Val Ser Asp Thr Leu
                245                 250                 255
Ile Phe Glu Ser Leu Ser Pro Val Ile Asn Leu Ala Tyr Ile Lys Lys
            260                 265                 270
Asn Cys Trp Asn Pro Ala Asp Pro Ser Ile Thr Phe Gln Gly Thr Arg
        275                 280                 285
Arg Thr Arg Thr Arg Ala Ser Ala Ser Ala Ser Glu Ala Pro Leu Pro
    290                 295                 300
Ser Gln His Pro Ser Gln Pro Phe Ser Gln Arg Pro Arg Pro Pro Leu
305                 310                 315                 320
Leu Ser Thr Ser Ala Pro Pro Tyr Met His Gly Gln Met Leu Arg Ser
                325                 330                 335
Leu Tyr Gln Gly Gln Gln Ile Ile Ile Gln Asn Leu Tyr Arg Leu Ser
            340                 345                 350
Leu His Leu Gln Met Asp Leu Pro Leu Met Thr Pro Glu Ala Tyr Arg
        355                 360                 365
Gln Gln Val Ala Lys Leu Gly Asp Gln Pro Ser Thr Asp Arg Gly Glu
    370                 375                 380
Glu Pro Ser Gly Ala Ala Ala Thr Glu Asp Pro Ala Val Asp Glu Asp
385                 390                 395                 400
Leu Ile Ala Asp Leu Ala Gly Ala Asp Trp Ser Pro Trp Ala Asp Leu
                405                 410                 415
Gly Arg Gly Ser Glx
            420
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<210> 7
<211> 1596
<212> DNA
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 7

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tgtcggcgta acaacgctgc aagaagaaga agggagcaag acatagaagg aagtagttac     120
acctcacctc ctccttctcc aaattatgct cagatggacg gggaaccggc acaaagagtc     180
acactagagg acttctctaa taccaccact cctcagttct ttacaagtat cacaaggccg     240
gaagtccaag cagatctcct tactcaaggg aacctcttcc atggtcttcc aaatgaagat     300
ccatatgcgc atctagcctc atacatagag atatgcagca ccgttaaaat cgccggagtt     360
ccaaaagatg cgatactcct taacctcttt tccttttccc tagcaggaga ggcaaaaaga     420
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tggttgcact cctttaaagg caatagctta agaacatggg aagaagtagt ggaaaaattc     480
ttaaagaagt atttcccaga gtcaaagacc gtcgaacgaa agatggagat ttcttatttc     540
catcaatttc tggatgaatc ccttagcgaa gcactagacc atttccacgg attgctaaga     600
aaaacaccaa cacacagata cagcgagcca gtacaactaa acatattcat cgatgacttg     660
caactcttaa tcgaaacagc tactagaggg aagatcaagc tgaagactcc cgaagaagcg     720
atggagctcg tcgagaacat ggcggctagc gatcaagcaa tccttcatga tcacacttat     780
gttcccacaa aaagaagcct cttggagctt agcacgcagg acgcaacttt ggtacaaaac     840
aagctgttga cgaggcagat agaagccctc atcgaaaccc tcagcaagct gcctcaacaa     900
ttacaagcga taagttcttc ccactcttct gttttgcagg tagaagaatg ccccacatgc     960
agagggacac atgagcctgg acaatgtgca agccaacaag acccctctcg tgaagtaaat    1020
tatataggca tactaaatcg ttacggattt cagggctaca accagggaaa tccatctgga    1080
ttcaatcaag gggcaacaag atttaatcac gagccaccgg ggtttaatca aggaagaaac    1140
ttcatgcaag gctcaagttg gacgaataaa ggaaatcaat ataaggagca aaggaaccaa    1200
ccaccatacc agccaccata ccagcaccct agccaaggtc cgaatcagca agaaaagccc    1260
accaaaatag aggaactgct gctgcaattc atcaaggaga caagatcaca tcaaaagagc    1320
acggatgcag ccattcggaa tctagaagtt caaatgggcc aactggcgca tgacaaagcc    1380
gaacggccca ctagaacttt cggtgctaac atggagagaa gaaccccaag gaaggataaa    1440
gcagtactga ctagagggca gagaagagcg caggaggagg gtaaggttga aggagaagac    1500
tggccagaag aaggaaggac agagaagaca gaagaagaag agaaggtggc agaagaacct    1560
aagcgtacca agagccagag agcaagggaa gccaag                               1596
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<210> 8
<211> 532
<212> PRT
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 8

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Met Arg Gly Arg Thr Ala Ser Gly Asp Val Val Pro Ile Asn Leu Glu
 1               5                  10                  15
Ile Glu Ala Thr Cys Arg Arg Asn Asn Ala Ala Arg Arg Arg Arg Glu
            20                  25                  30
Gln Asp Ile Glu Gly Ser Ser Tyr Thr Ser Pro Pro Pro Ser Pro Asn
        35                  40                  45
Tyr Ala Gln Met Asp Gly Glu Pro Ala Gln Arg Val Thr Leu Glu Asp
    50                  55                  60
Phe Ser Asn Thr Thr Thr Pro Gln Phe Phe Thr Ser Ile Thr Arg Pro
65                  70                  75                  80
Glu Val Gln Ala Asp Leu Leu Thr Gln Gly Asn Leu Phe His Gly Leu
                85                  90                  95
Pro Asn Glu Asp Pro Tyr Ala His Leu Ala Ser Tyr Ile Glu Ile Cys
            100                 105                 110
Ser Thr Val Lys Ile Ala Gly Val Pro Lys Asp Ala Ile Leu Leu Asn
        115                 120                 125
Leu Phe Ser Phe Ser Leu Ala Gly Glu Ala Lys Arg Trp Leu His Ser
    130                 135                 140
Phe Lys Gly Asn Ser Leu Arg Thr Trp Glu Glu Val Val Glu Lys Phe
145                 150                 155                 160
Leu Lys Lys Tyr Phe Pro Glu Ser Lys Thr Val Glu Arg Lys Met Glu
                165                 170                 175
Ile Ser Tyr Phe His Gln Phe Leu Asp Glu Ser Leu Ser Glu Ala Leu
            180                 185                 190
Asp His Phe His Gly Leu Leu Arg Lys Thr Pro Thr His Arg Tyr Ser
        195                 200                 205
Glu Pro Val Gln Leu Asn Ile Phe Ile Asp Asp Leu Gln Leu Leu Ile
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    210                 215                 220
Glu Thr Ala Thr Arg Gly Lys Ile Lys Leu Lys Thr Pro Glu Glu Ala
225                 230                 235                 240
Met Glu Leu Val Glu Asn Met Ala Ala Ser Asp Gln Ala Ile Leu His
                245                 250                 255
Asp His Thr Tyr Val Pro Thr Lys Arg Ser Leu Leu Glu Leu Ser Thr
            260                 265                 270
Gln Asp Ala Thr Leu Val Gln Asn Lys Leu Leu Thr Arg Gln Ile Glu
        275                 280                 285
Ala Leu Ile Glu Thr Leu Ser Lys Leu Pro Gln Gln Leu Gln Ala Ile
    290                 295                 300
Ser Ser Ser His Ser Ser Val Leu Gln Val Glu Glu Cys Pro Thr Cys
305                 310                 315                 320
Arg Gly Thr His Glu Pro Gly Gln Cys Ala Ser Gln Gln Asp Pro Ser
                325                 330                 335
Arg Glu Val Asn Tyr Ile Gly Ile Leu Asn Arg Tyr Gly Phe Gln Gly
            340                 345                 350
Tyr Asn Gln Gly Asn Pro Ser Gly Phe Asn Gln Gly Ala Thr Arg Phe
        355                 360                 365
Asn His Glu Pro Pro Gly Phe Asn Gln Gly Arg Asn Phe Met Gln Gly
    370                 375                 380
Ser Ser Trp Thr Asn Lys Gly Asn Gln Tyr Lys Glu Gln Arg Asn Gln
385                 390                 395                 400
Pro Pro Tyr Gln Pro Pro Tyr Gln His Pro Ser Gln Gly Pro Asn Gln
                405                 410                 415
Gln Glu Lys Pro Thr Lys Ile Glu Glu Leu Leu Leu Gln Phe Ile Lys
            420                 425                 430
Glu Thr Arg Ser His Gln Lys Ser Thr Asp Ala Ala Ile Arg Asn Leu
        435                 440                 445
Glu Val Gln Met Gly Gln Leu Ala His Asp Lys Ala Glu Arg Pro Thr
    450                 455                 460
Arg Thr Phe Gly Ala Asn Met Glu Arg Arg Thr Pro Arg Lys Asp Lys
465                 470                 475                 480
Ala Val Leu Thr Arg Gly Gln Arg Arg Ala Gln Glu Glu Gly Lys Val
                485                 490                 495
Glu Gly Glu Asp Trp Pro Glu Glu Gly Arg Thr Glu Lys Thr Glu Glu
            500                 505                 510
Glu Glu Lys Val Ala Glu Glu Pro Lys Arg Thr Lys Ser Gln Arg Ala
        515                 520                 525
Arg Glu Ala Lys
    530
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<210> 9
<211> 603
<212> DNA
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 9

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atcatggaag tagagatctt tgactgttgg ggcatagact tcatggggcc ttttccttcg     120
tcatacggga atgtctacat cttggtagct gtggattacg tctccaaatg ggtggaagcc     180
atagccacgc caaaggacga tgccagggta gtgatcaaat ttctgaagaa gaacattttt     240
tcccgttttg gagtcccacg agccttgatt agtgataggg gaacgcactt ctgcaacaat     300
cagttgaaga aagtcctgga gcactataat gtccgacata aggtggccac accttatcac     360
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cctcagacaa atggccaagc agaaatttct aacagggagc tcaagcgaat cctggaaaag 420
acagttgcat caacaagaaa ggattggtcc ttgaagctcg atgatgctct ctgggcctat 480
aggacagcgt tcaagactcc catcggctta tcaccatttc agctagtgta tgggaaggca 540
tgtcatttac cagtggagct ggagtacaaa gcatattggg ctctcaagtt gctcaacttt 600
gac 603

<210> 10
<211> 201
<212> PRT
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 10
Cys Asp Lys Cys Gln Arg Thr Gly Gly Ile Ser Arg Arg Asn Glu Met
1 5 10 15
Pro Leu Gln Asn Ile Met Glu Val Glu Ile Phe Asp Cys Trp Gly Ile
20 25 30
Asp Phe Met Gly Pro Phe Pro Ser Ser Tyr Gly Asn Val Tyr Ile Leu
35 40 45
Val Ala Val Asp Tyr Val Ser Lys Trp Val Glu Ala Ile Ala Thr Pro
50 55 60
Lys Asp Asp Ala Arg Val Val Ile Lys Phe Leu Lys Lys Asn Ile Phe
65 70 75 80
Ser Arg Phe Gly Val Pro Arg Ala Leu Ile Ser Asp Arg Gly Thr His
85 90 95
Phe Cys Asn Asn Gln Leu Lys Lys Val Leu Glu His Tyr Asn Val Arg
100 105 110
His Lys Val Ala Thr Pro Tyr His Pro Gln Thr Asn Gly Gln Ala Glu
115 120 125
Ile Ser Asn Arg Glu Leu Lys Arg Ile Leu Glu Lys Thr Val Ala Ser
130 135 140
Thr Arg Lys Asp Trp Ser Leu Lys Leu Asp Asp Ala Leu Trp Ala Tyr
145 150 155 160
Arg Thr Ala Phe Lys Thr Pro Ile Gly Leu Ser Pro Phe Gln Leu Val
165 170 175
Tyr Gly Lys Ala Cys His Leu Pro Val Glu Leu Glu Tyr Lys Ala Tyr
180 185 190
Trp Ala Leu Lys Leu Leu Asn Phe Asp
195 200

<210> 11
<211> 600
<212> DNA
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 11
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gttcccaaga aaggtggaat gacagtggta cgagatgaga ggaatgactt gataccaaca 120
cgaactgtca ctggttggcg aatgtgtatc gactatcgca agctgaatga agccacacgg 180
aaggaccatt tccccttacc tttcatggat cagatgctgg agagacttgc agggcaggca 240
tactactgtt tcttggatgg atactcggga tacaaccaga tcgcggtaga ccccagagat 300
caggagaaga cggcctttac atgccccttt ggcgtctttg cttacagaag gatgccattc 360

gggttatgta atgcaccagc cacatttcag aggtgcatgc tggccatttt ttcagacatg 420
gtggagaaaa gcatcgaggt atttatggac gacttctcgg tttttggacc ctcatttgac 480
agctgtttga ggaacctaga gagggtactt cagaggtgcg aagagactaa cttggtactg 540
aattgggaaa agtgtcattt catggttcga gagggcatag tcctaggcca caagatctca 600

<210> 12
<211> 200
<212> PRT
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 12
Leu Glu Ala Gly Leu Ile Tyr Pro Ile Ser Asp Ser Ala Trp Val Ser
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Pro Val Gln Val Val Pro Lys Lys Gly Gly Met Thr Val Val Arg Asp
20 25 30
Glu Arg Asn Asp Leu Ile Pro Thr Arg Thr Val Thr Gly Trp Arg Met
35 40 45
Cys Ile Asp Tyr Arg Lys Leu Asn Glu Ala Thr Arg Lys Asp His Phe
50 55 60
Pro Leu Pro Phe Met Asp Gln Met Leu Glu Arg Leu Ala Gly Gln Ala
65 70 75 80
Tyr Tyr Cys Phe Leu Asp Gly Tyr Ser Gly Tyr Asn Gln Ile Ala Val
85 90 95
Asp Pro Arg Asp Gln Glu Lys Thr Ala Phe Thr Cys Pro Phe Gly Val
100 105 110
Phe Ala Tyr Arg Arg Met Pro Phe Gly Leu Cys Asn Ala Pro Ala Thr
115 120 125
Phe Gln Arg Cys Met Leu Ala Ile Phe Ser Asp Met Val Glu Lys Ser
130 135 140
Ile Glu Val Phe Met Asp Asp Phe Ser Val Phe Gly Pro Ser Phe Asp
145 150 155 160
Ser Cys Leu Arg Asn Leu Glu Arg Val Leu Gln Arg Cys Glu Glu Thr
165 170 175
Asn Leu Val Leu Asn Trp Glu Lys Cys His Phe Met Val Arg Glu Gly
180 185 190
Ile Val Leu Gly His Lys Ile Ser
195 200

<210> 13
<211> 858
<212> DNA
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 13
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aacaaggagc gttactttgc acgtttcttg gaaatattca aagggttaga aatcactatg 120
ccattcgggg aagccttaca gcagatgccc ctctactcca aatttatgaa agacatcctc 180
accaagaagg ggaagtatat tgacaacgag aatattgtgg taggaggcaa ttgcagtgcg 240
ataatacaaa ggattctacc caagaagttt aaagaccccg gaagtgttac catcccgtgc 300
accattggga aggaagccgt aaacaaggcc ctcattgatc taggagcaag tatcaatctg 360
atgcccttgt caatgtgcaa aagaattggg aatttgaaga tagatcccac caagatgacg 420

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cttcaactgg cagaccgctc aatcacaagg ccatatgggg tggtagaaga tgtcctggtc     480
aaggtacgcc acttcacttt tccggtggac tttgttatca tggatatcga agaagacact     540
gagattcccc ttatcttagg cagacccttc atgctgactg ccaactgtgt ggtggatatg     600
gggaaaggga acttagagtt gactattgat aatcagaaga tcacctttga ccttatcaag     660
gcaatgaagt acccacagga gggttggaag tgcttcagaa tagaggagat tgatgaggaa     720
gatgtcagtt ttctcgagac accaaagact tcgctagaaa aagcaatggt aaatcattta     780
gactgtctaa ccagtgaaga ggaagaagat ctgaaggctt gcttggaaaa cttggatcaa     840
gaagacagta ttcctgag                                                  858

<210> 14
<211> 286
<212> PRT
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 14
Lys Glu Glu Pro Leu Ala Leu Pro Gln Asp Leu Pro Tyr Pro Met Ala
 1               5                  10                  15
Pro Thr Lys Lys Asn Lys Glu Arg Tyr Phe Ala Arg Phe Leu Glu Ile
            20                  25                  30
Phe Lys Gly Leu Glu Ile Thr Met Pro Phe Gly Glu Ala Leu Gln Gln
        35                  40                  45
Met Pro Leu Tyr Ser Lys Phe Met Lys Asp Ile Leu Thr Lys Lys Gly
    50                  55                  60
Lys Tyr Ile Asp Asn Glu Asn Ile Val Val Gly Gly Asn Cys Ser Ala
65                  70                  75                  80
Ile Ile Gln Arg Ile Leu Pro Lys Lys Phe Lys Asp Pro Gly Ser Val
                85                  90                  95
Thr Ile Pro Cys Thr Ile Gly Lys Glu Ala Val Asn Lys Ala Leu Ile
            100                 105                 110
Asp Leu Gly Ala Ser Ile Asn Leu Met Pro Leu Ser Met Cys Lys Arg
        115                 120                 125
Ile Gly Asn Leu Lys Ile Asp Pro Thr Lys Met Thr Leu Gln Leu Ala
    130                 135                 140
Asp Arg Ser Ile Thr Arg Pro Tyr Gly Val Val Glu Asp Val Leu Val
145                 150                 155                 160
Lys Val Arg His Phe Thr Phe Pro Val Asp Phe Val Ile Met Asp Ile
                165                 170                 175
Glu Glu Asp Thr Glu Ile Pro Leu Ile Leu Gly Arg Pro Phe Met Leu
            180                 185                 190
Thr Ala Asn Cys Val Val Asp Met Gly Lys Gly Asn Leu Glu Leu Thr
        195                 200                 205
Ile Asp Asn Gln Lys Ile Thr Phe Asp Leu Ile Lys Ala Met Lys Tyr
    210                 215                 220
Pro Gln Glu Gly Trp Lys Cys Phe Arg Ile Glu Glu Ile Asp Glu Glu
225                 230                 235                 240
Asp Val Ser Phe Leu Glu Thr Pro Lys Thr Ser Leu Glu Lys Ala Met
                245                 250                 255
Val Asn His Leu Asp Cys Leu Thr Ser Glu Glu Glu Glu Asp Leu Lys
            260                 265                 270
Ala Cys Leu Glu Asn Leu Asp Gln Glu Asp Ser Ile Pro Glu
        275                 280                 285

<210> 15
<211> 192
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<212> DNA
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 15
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gacaaggtat ttcacgccat ctattatgct agcaaggtcc tgaatgaagc acagttgaat 120
tatgcaacca cagaaaagga gatgctagcc attgtctttg ccttggagaa gttcaggtca 180
tacttgatag gg 192

<210> 16
<211> 64
<212> PRT
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 16
Phe Glu Leu Met Cys Asp Ala Ser Asp Tyr Ala Val Gly Ala Val Leu
1 5 10 15
Gly Gln Arg Lys Asp Lys Val Phe His Ala Ile Tyr Tyr Ala Ser Lys
20 25 30
Val Leu Asn Glu Ala Gln Leu Asn Tyr Ala Thr Thr Glu Lys Glu Met
35 40 45
Leu Ala Ile Val Phe Ala Leu Glu Lys Phe Arg Ser Tyr Leu Ile Gly
50 55 60

<210> 17
<211> 12286
<212> DNA
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 17
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ttaattattt agcagttatt tgtgattaaa agttagaaaa gcaattaagt tgaatttttg 120
gccatagata tgaaaactga aggtacaaca agcaaaaggc agcagaaagt gaagaaaaag 180
aataaaatct gaagcagacc cagcccaaca cgcgccctta gcgcgcgtca cgcgctaagc 240
ttgcaaggca gcacaggcac taagcgaggc gttaagcacg aagatgcagg attcgttacg 300
tgcgctaagc gcgaggcaca cgctaagcgc gcgatccaac agaagcacac gctaagcctg 360
cagcatgcgc taagcgcgcc tacgaaggcc caaagcccat ttctacacct ataaatagag 420
atccaagcca agggagaatg tacaccttgc ctcagagcac ttctctcagc attccaagct 480
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taaaaagcca atgatgtatg gtgtacttca agagttatca atgcaaagag gattcattcc 660
aggttttatg ttctaattct ttccttttta tcttgcattt atgtcttaaa tttctgttgg 720
gttttattcg ctcgggagag ggtatttcct aataagggtt taagaagtaa tgcatgcatc 780
agttttaggg gttatacgct tggtaaaggg taacacctaa tagaacaaat taagaaaagg 840
atcgtcgggc tagcattgct aggcatagaa tgatggccca atgcccatgc atttagcaac 900
atctagaatt taaccttaat gcattttaat tattgaatct tcacaaaggc atttgggaga 960
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tgggtagaac taattcaact gcattggtaa tgaacatcat aaattcattc atcgtaggcc 1080

aattaggttt gtccggtctt ggcattttca tcaattgtct tcctaaatta tttgatctaa 1140
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gaagagtatt caataaagtg caataaaatc cctatggaaa cgatactcgg acttccgaga 1260
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ttcttttctt ggctcattct tttattattc tttactttac tttttcttct atcctttctt 1440
tcttctccca taaattgcac gggtagtgcc tttttgtttt tatgcgaggt agaactgcat 1500
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Tyr Ala Gln Met Asp Gly Glu Pro Ala Gln Arg Val Thr Leu Glu Asp
    50                  55                  60
Phe Ser Asn Thr Thr Thr Pro Gln Phe Phe Thr Ser Ile Thr Arg Pro
65                  70                  75                  80
Glu Val Gln Ala Asp Leu Leu Thr Gln Gly Asn Leu Phe His Gly Leu
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Pro Asn Glu Asp Pro Tyr Ala His Leu Ala Ser Tyr Ile Glu Ile Cys
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Ser Thr Val Lys Ile Ala Gly Val Pro Lys Asp Ala Ile Leu Leu Asn
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cattaaaaga cggctttcac atgtccgttt ggagtgttcg cataccgaaa aatgtccttt 360
gggttgtgca atgcaccgac gactttccaa cgatgtgtgc aagccatttt tgccgacctt 420
aatgagaaaa caatggaagt cttcatggat gacttctcgg tatttggtgt atcctttagt 480
ttatgcttgg caaacttgaa aacggtgctt gaaagatgtg tgaagaccaa tcttgtgctt 540
aattggtaga agtgccactt catggtgacc gaggggatag tgcttggcca taaagtc 597

<210> 30
<211> 192
<212> DNA
<213> Pisum sativum

<400> 30
tttgagctaa tgtgtgatgc gagcaactat gcaatcggag cggtattagg ccaaagaaaa 60
gagaaaaaat ttcatgcgat acattacgca agtaaagttc ttaatgaggc tcaaattaac 120
tatgccacca ctgaaaaaga attacttgcg atagtgtatg cacttgaaaa gtttaggtct 180
tatcttatag gg 192

<210> 31
<211> 581
<212> DNA
<213> Pisum sativum

<400> 31
tgtgatagtt gccagagaag cggtgggatt ggtaagagag acgagatgtc tctccaaaac 60
atccaagagg tcgaagtatt tgattgttgg ggcatcgatt ttgtaggacc attccccct 120
cttatggtaa cgagtatatg cttgtcgcag ttgaggcgat tgcctcacct cgggcggatg 180
cgaaaacggt aataattttt ttgaagaaaa acatattttc ccgtttcgga acccccgag 240
tgttgataag tgacggaggg tcacactttt gtaatgcacc gttggaaagc attttaaaac 300
attacggtgt atcacacaga gtggcaactc cgtatcaccc acaggctaat ggacaagccg 360
aggtctctaa tcgtgagatt aagagaattc tcgaaaaaac tgtgtcaaat tcgaaaaaag 420
agtggtcaca aaaattggat gaagcgttat gggcataccg taccgccttt aaagctccaa 480
ttgggctcac tccttttcaa ttggtgtttg gtaaaacttg ccatttgccg gtcgaattgg 540
agcacaaagc cttgtgggct ttgaaaatta ataattttga a 581

<210> 32
<211> 1362
<212> DNA
<213> Glycine max

<400> 32
atggcctcct gtaaacaccg agctgtgccc acacccgggg aagcgtccaa ctgggactct 60
tcacgtttca ctttcgagat tgcttggcac agataccagg atagcattca gctccggaac 120
atccttccag agaggaatgt agagcttgga ccagggatgt ttgatgagtt cctgcaggaa 180
ctccagaggc tcagatggga ccaggttctg acccgacttc cagagaagtg gattgatgtt 240
gctctggtga aggagtttta ctccaaccta tatgatccag aggaccacag tccgaagttt 300
tggagtgttc gaggacaggt tgtgagattt gatgctgaga cgattaatga tttcctcgac 360
accccggtca tcttggcaga gggagaggat tatccagcct actctcagta cctcagcact 420
cctccagacc atgatgccat cctttccgct ctgtgtactc caggggacg atttgttctg 480
aatgttgata gtgccccctg gaagctgctg cggaaggatc tgatgacgct cgcgcagaca 540
tggagtgtgc tctcttattt taaccttgca ctgacttttc acacttctga tattaatgtt 600
gacagggccc gactcaatta tggcttggtg atgaagatgg acctggacgt gggcagcctc 660
atttctcttt agatcagtca gatcgcccag tccatcactt ccaggcttgg gttcccagcg 720
ttgatcacaa cactgtgtga gattcagggg gttgtctctg ataccctgat ttttgagtca 780
ctcagtcctg tgatcaacct tgcctacatt aagaagaact gctggaaccc tgccgatcca 840
tctatcacat ttcaggggac ccgccgcacg cgcaccagag cttcggcgtc ggcatctgag 900
gctcctcttc catcccagca tccttctcag ccttttttccc agtgaccacg gcctccactt 960
ctatccacct cagcacctcc atacatgcat ggacagatgc tcaggtcctt gtaccagggt 1020
cagcagatca tcattcagaa cctgtatcga ttgtccctac atttgcagat ggatctgcca 1080
ctcatgactc cggaggccta tcgtcagcag gtcgcctagc taggagacca gccctccact 1140
gacaggggggg aagagccttc tggagccgct gctactgagg atcctgccgt tgatgaagac 1200
ctcatagctg acttggctgg cgctgattgg agcccatggg cagacttggg cagaggcagc 1260
tgatcttatg ctttaatgtt ttcttttata ttatgtttgt gttctctttt atgttttatg 1320

ttatgttttt atgtagtctg tttggtaatt aaaaagaggt ag 1362

<210> 33
<211> 192
<212> DNA
<213> Glycine max

<400> 33
tttgagttga tgtgtgacgc gagcgattat gctataggtg cagtgcttgg acaaaggaag 60
ggcaaaattt ttcatgctat ctactacgcc agcaaagttt taaatgatgc acaggttaac 120
tatgctacca cagaaaaaga aatgttggca attgtttatg cacttgaaaa gttcaaatct 180
tatttggtag gc 192

<210> 34
<211> 597
<212> DNA
<213> Glycine max

<400> 34
ttggaggttg ggctcatata ccccatctct gacaacgctt gggtaagccc agtacaggtg 60
gttcccaaga aaggtggaat gacagtggta caaaatgaga ggaatgactt gataccaaca 120
cgaacagtca ctggctggcg aatgtgtatt gactatcaca agctgaatga agctacacgg 180
aaggaccatt tccccttacc tttcatggat cagatgctgg agagacttgc agggcaggca 240
tactactgtt tcttggatgg atactcggga tacaaccaga tcgcggtaga ccccatagat 300
caggagaaga cggtctttac atgccccttt ggcgtctttg cttacagaag gatgtcattc 360
gggttatgta atgtaccagc cacatttcag aggtgcatgc tgaccatttt ttcagacatg 420
gtggagaaaa gcatcgaggt atttatggac gacttctcgg tttttggacc ctcatttgac 480
agctgtttga ggaacctaga aatggtactt cagaggtgcg tagagactaa cttggtactg 540
aattgggaaa agtgtcattt tatggttcga gagggcatag tcctaggcca caagatc 597

<210> 35
<211> 603
<212> DNA
<213> Glycine max

<400> 35
tgtgataaat gtcagagaac aaggggata tctcgaagaa atgagatgcc tttgcagaat 60
atcatggagg tagagatctt tgatagttgg ggcatagact tcatggggcc tcttccttca 120
tcatacagga atgtctacat cttggtagct gtggattacg tctccaaatg ggtggaagcc 180
atagccacgc tgaaggacga tgccagggta gtgatcaaat ttctgaagaa gaacatttt 240
tcccatttcg gagtcccacg agccttgatt agtgatgggg gaacgcactt ctgcaacaat 300
cagttgaaga aagtcctgga gcactataat gtccgacaca aggtggccac accttatcac 360
actcagacga atggccaagc agaaatttct aacagggagc tcaagcgaat cctggaaaag 420
acagttgcat catcaagaaa ggattgggcc ttgaagctcg atgatactct ctgggcctat 480
aggacagcgt tcaagactcc catcggctta tcaccatttc agctagtata tgggaaggca 540
tgtcatttac cagtagagct ggagcacaag gcatattggg ctctcaagtt gctcaacttt 600
gac 603

<210> 36
<211> 150
<212> DNA
<213> Glycine max

<400> 36
cctaaaatac tacaacgaca tgattggtgt tttaggataa ttgactgaaa aacctattat 60
caatttggcg ccgttgccaa ttgggtgttt gtttgttaca tttgagattt cagacttgct 120
tagatcaagt tctttttcaa ttttcttttt 150

<210> 37
<211> 11
<212> DNA
<213> Glycine max

<400> 37
tggcgccgtt g 11

<210> 38
<211> 15
<212> DNA
<213> Glycine max

<400> 38
tggcgccgtt gccgg 15

<210> 39
<211> 27
<212> DNA
<213> Glycine max

<400> 39
tttttggcgc cgttgtcggg gattttg 27

<210> 40
<211> 9
<212> DNA
<213> Glycine max

<400> 40
tttgggggga 9

<210> 41
<211> 16
<212> DNA
<213> Glycine max

<400> 41
tttaatttgg gggatt 16

<210> 42
<211> 775
<212> DNA
<213> Nicotiana tabacum

<400> 42
gtgcgtaaag aggtttttaa actggagatt atcaagtgat tggatgccgg ggttatctac 60
cccatttacg atagttcatg aacttctccg gtgcaatgtg tcccaaagaa ggtggcatga 120
cggtggtcac caatgagaag aatgagttga ttcctacaag aatggtgacc ggttggagag 180
tgtgcatgga ctatcgcaag ctcaacaaac tcacaaggaa ggatcatttc ccatttccat 240
tccttgacca aatgcttgat aggttggcat gtcgtgcttt ctattgcttt ctagatgtat 300
agtcgggcta tagccaaatc tttattgctc cgtaggatca cgagaaaata cctttacatg 360
tccctatggt acttttgcct acaagcggat gccatttggt ttgtgtaatg cactagcgaa 420
cttttatagg tgtatgatgg ctatcttcac ggacatggtg aaggactacc ttaaagtttt 480
catggatgac ttctcgatgg ttggggattc ctttgatgat tgcttggaaa atttggataa 540
agtattggca agatatgaag aaacgaattt ggtactaaat tgggagaagt gtcatttcat 600

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gatcgaggaa ggcattgttc ttggccacaa gatctcaaat aatggcattg aagtcgacaa     660
ggcaaagatt aaggtgattt ctaaacttac acctccaact ttggtgaaag gcgtgcggag     720
tttcttaggc cacgcggggt tttaccaatt cttcataaaa gatttcacaa aggtt          775

<210> 43
<211> 259
<212> PRT
<213> Nicotiana tabacum

<400> 43
Val Arg Lys Glu Val Phe Lys Leu Glu Ile Ile Lys Glx Leu Asp Ala
 1               5                  10                  15
Gly Val Ile Tyr Pro Ile Tyr Asp Ser Ser Glx Thr Ser Pro Val Gln
            20                  25                  30
Cys Val Pro Lys Lys Gly Gly Met Thr Val Val Thr Asn Glu Lys Asn
        35                  40                  45
Glu Leu Ile Pro Thr Arg Met Val Thr Gly Trp Arg Val Cys Met Asp
    50                  55                  60
Tyr Arg Lys Leu Asn Lys Leu Thr Arg Lys Asp His Phe Pro Phe Pro
65                  70                  75                  80
Phe Leu Asp Gln Met Leu Asp Arg Leu Ala Cys Arg Ala Phe Tyr Cys
                85                  90                  95
Phe Leu Asp Val Glx Ser Gly Tyr Ser Gln Ile Phe Ile Ala Pro Glx
            100                 105                 110
Asp His Glu Lys Thr Thr Phe Thr Cys Pro Tyr Gly Thr Phe Ala Tyr
        115                 120                 125
Lys Arg Met Pro Phe Gly Leu Cys Asn Ala Leu Ala Asn Phe Tyr Arg
    130                 135                 140
Cys Met Met Ala Ile Phe Thr Asp Met Val Lys Asp Tyr Leu Lys Val
145                 150                 155                 160
Phe Met Asp Asp Phe Ser Met Val Gly Asp Ser Phe Asp Asp Cys Leu
                165                 170                 175
Glu Asn Leu Asp Lys Val Leu Ala Arg Tyr Glu Glu Thr Asn Leu Val
            180                 185                 190
Leu Asn Trp Glu Lys Cys His Phe Met Ile Glu Glu Gly Ile Val Leu
        195                 200                 205
Gly His Lys Ile Ser Asn Asn Gly Ile Glu Val Asp Lys Ala Lys Ile
    210                 215                 220
Lys Val Ile Ser Lys Leu Thr Pro Pro Thr Leu Val Lys Gly Val Arg
225                 230                 235                 240
Ser Phe Leu Gly His Ala Gly Phe Tyr Gln Phe Phe Ile Lys Asp Phe
                245                 250                 255
Thr Lys Val


<210> 44
<211> 761
<212> DNA
<213> Nicotiana tabacum

<400> 44
gtgcgtaaag aggtggtcaa gctgttggat gtcggggttg tgtaccccat ctctgatagc      60
tcttggactt cgccggtgca atgtgtacca aagaaggttg gcatgactgt ggtgaaaaat     120
tccaaaaatg agttgattcc gacaagaacc atcaccggtt ggagggtatg catggactac     180
cgcaagttga ataaagtgac ctgcaaggat cactttcctt tgccatttct ggatcagatg     240
ctagatcgac ttgctgggcg tgccttctat tgcttcttgg atgaatattc tgggtataac     300
caaatcttga ttgctccgga agatccggaa aagaccacat tcacttgtcc gtatggcaca     360
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tttgttttct ctaggatgcc ttttaggttg tgtaatgcac cagctacatt tcagcggtgt     420
atgatggcca ttttctccta tatggtgaaa gacatttttg aggtgttcat ggacgatttt     480
agtgttgtgg ggcactcatt tgatgaatgc ttgaagaatc ttgatagggt gttggcccat     540
tgtgaagaaa ccaatcttgt cctcaattgg gagaaatgcc actttatggt agaagaagga     600
atcaatctct ggcataaaat ttcaaaacat ggcattgagg tggataaaca aagatagatg     660
tgatttcaag gctccctccc cctacatccg tcaagggagt ccgatgtttt cttgggcatg     720
cggggttcta ttggagattc ataaaagact tctccaaggt t                        761

<210> 45
<211> 254
<212> PRT
<213> Nicotiana tabacum

<400> 45
Val Arg Lys Glu Val Val Lys Leu Leu Asp Val Gly Val Val Tyr Pro
 1               5                  10                  15
Ile Ser Asp Ser Ser Trp Thr Ser Pro Val Gln Cys Val Pro Lys Lys
            20                  25                  30
Val Gly Met Thr Val Val Lys Asn Ser Lys Asn Glu Leu Ile Pro Thr
        35                  40                  45
Arg Thr Ile Thr Gly Trp Arg Val Cys Met Asp Tyr Arg Lys Leu Asn
    50                  55                  60
Lys Val Thr Cys Lys Asp His Phe Pro Leu Pro Phe Leu Asp Gln Met
65                  70                  75                  80
Leu Asp Arg Leu Ala Gly Arg Ala Phe Tyr Cys Phe Leu Asp Glu Tyr
                85                  90                  95
Ser Gly Tyr Asn Gln Ile Leu Ile Ala Pro Glu Asp Pro Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Gly Thr Phe Val Phe Ser Arg Met Pro Phe
        115                 120                 125
Arg Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
    130                 135                 140
Phe Ser Tyr Met Val Lys Asp Ile Phe Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Val Gly His Ser Phe Asp Glu Cys Leu Lys Asn Leu Asp Arg
                165                 170                 175
Val Leu Ala His Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Glu Glu Gly Ile Asn Leu Trp His Lys Ile Ser
        195                 200                 205
Lys His Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Ser Arg
    210                 215                 220
Leu Pro Pro Pro Thr Ser Val Lys Gly Val Arg Cys Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Trp Arg Phe Ile Lys Asp Phe Ser Lys Val
                245                 250

<210> 46
<211> 762
<212> DNA
<213> Nicotiana tabacum

<400> 46
gtgcgtaagg aggtgtttaa gttgttggat gttggggttg tgtaccccat ctctgatagc      60
tcttgcattt cgccggtgca atgtgtaccg aagaagggtg gcatgaccgt ggttgcaaat     120
tcgcaaaatg ggttgattcc taccaggatc gtcaccgggt ggaaggtatg catggattac     180
cgaaagttga ataaagtgac ccgcaaggat cactttccat tgccttttct tgatcagatg     240
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ttagatcgac ttgctgggcg tgccttctac tgtttcttgg atgggtattc tggatacaac 300
caaatcttca ttactccgga agatcaggag aagacaacat tcacttgtcc atatggcacc 360
tttgcttttt ctaggatgcc ttttgggttg tgtaatgcac cgactacatt ctagcggtat 420
atgatggcca ttttcactga tatggtggaa gatattttgg aggtgttcat ggacgacttt 480
agtgttgtgg gtgattcatt tgatgaatgt ttgaataatc ttgatagagt gttggcccat 540
tgtaaagaaa ccaatcttgt tcttaattgg gagaaatgcc acttcatggt tgaggagggc 600
atagttcttg ggcataaaat tttaaagcat ggtatagagg tggacaaagc aaaaattgat 660
gtgatttcaa ggctccctcc ccctacttct gtcaagggag tgagaagttt tcttaggcat 720
gcggggttct accggagatt catcaaagat ttcaccaaag tt 762

<210> 47
<211> 254
<212> PRT
<213> Nicotiana tabacum

<400> 47
Val Arg Lys Glu Val Phe Lys Leu Leu Asp Val Gly Val Val Tyr Pro
1 5 10 15
Ile Ser Asp Ser Ser Cys Ile Ser Pro Val Gln Cys Val Pro Lys Lys
20 25 30
Gly Gly Met Thr Val Val Ala Asn Ser Gln Asn Gly Leu Ile Pro Thr
35 40 45
Arg Ile Val Thr Gly Trp Lys Val Cys Met Asp Tyr Arg Lys Leu Asn
50 55 60
Lys Val Thr Arg Lys Asp His Phe Pro Leu Pro Phe Leu Asp Gln Met
65 70 75 80
Leu Asp Arg Leu Ala Gly Arg Ala Phe Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Phe Ile Thr Pro Glu Asp Gln Glu Lys Thr
100 105 110
Thr Phe Thr Cys Pro Tyr Gly Thr Phe Ala Phe Ser Arg Met Pro Phe
115 120 125
Gly Leu Cys Asn Ala Pro Thr Thr Phe Glx Arg Tyr Met Met Ala Ile
130 135 140
Phe Thr Asp Met Val Glu Asp Ile Leu Glu Val Phe Met Asp Asp Phe
145 150 155 160
Ser Val Val Gly Asp Ser Phe Asp Glu Cys Leu Asn Asn Leu Asp Arg
165 170 175
Val Leu Ala His Cys Lys Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Glu Glu Gly Ile Val Leu Gly His Lys Ile Leu
195 200 205
Lys His Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Ser Arg
210 215 220
Leu Pro Pro Pro Thr Ser Val Lys Gly Val Arg Ser Phe Leu Arg His
225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 48
<211> 760
<212> DNA
<213> Nicotiana tabacum

<400> 48
gcggaaggag gtcgtcaagc tgttggatgt cggtgttgtg taccccatat ttgatagctc 60
ttggactttg ccggtgcaat atgtgccgaa gaagggtggt atgaccgtgg ttaccaatgt 120

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aaaaaatgag ttgattccta ccaggactgt caccgggtgg agggtgtgca tggattacca     180
caaattgaat aaagtgaccc gcaaggatca ctttccatta ccttttcttg atcagatgtt     240
agacagactt gctgggtgtg ccttctactg tttcttggat gggtattctg ggtgcaacaa     300
aattttgatt gcaccaaaag atcaggagaa gaccaccttt acttgtacgt atggtacctt     360
tgtcttttct aggatgtcat ttgggttgtg taatgcaccg actacattct agaggtgtat     420
gatggccata tttacctaca tggtggagga cattttggag gtgtttatgg atgacttcag     480
tgttgttggt gactagtttg atgaatgttt gaaaaatctt gatagagtgt tggcccgttg     540
tgaagaagcc aaccttgtgc ttaattggga gaaatgccac ttcatggttg aggagggcat     600
agtccttagc cataaaattt caaagcatgg tatagaggtg gacaaagcaa aaattgaagt     660
gatttcaagg ctccttcccc ctacttctgt caagggagtt agaagttttc ttgggcatgc     720
ggggttctac tggagattca tcaaagactt cacgaaggtt                           760

<210> 49
<211> 253
<212> PRT
<213> Nicotiana tabacum

<400> 49
Arg Lys Glu Val Val Lys Leu Leu Asp Val Gly Val Val Tyr Pro Ile
 1               5                  10                  15
Phe Asp Ser Ser Trp Thr Leu Pro Val Gln Tyr Val Pro Lys Lys Gly
            20                  25                  30
Gly Met Thr Val Val Thr Asn Val Lys Asn Glu Leu Ile Pro Thr Arg
        35                  40                  45
Thr Val Thr Gly Trp Arg Val Cys Met Asp Tyr His Lys Leu Asn Lys
    50                  55                  60
Val Thr Arg Lys Asp His Phe Pro Leu Pro Phe Leu Asp Gln Met Leu
65                  70                  75                  80
Asp Arg Leu Ala Gly Cys Ala Phe Tyr Cys Phe Leu Asp Gly Tyr Ser
                85                  90                  95
Gly Cys Asn Lys Ile Leu Ile Ala Pro Lys Asp Gln Glu Lys Thr Thr
            100                 105                 110
Phe Thr Cys Thr Tyr Gly Thr Phe Val Phe Ser Arg Met Ser Phe Gly
        115                 120                 125
Leu Cys Asn Ala Pro Thr Thr Phe Glx Arg Cys Met Met Ala Ile Phe
    130                 135                 140
Thr Tyr Met Val Glu Asp Ile Leu Glu Val Phe Met Asp Asp Phe Ser
145                 150                 155                 160
Val Val Gly Asp Glx Phe Asp Glu Cys Leu Lys Asn Leu Asp Arg Val
                165                 170                 175
Leu Ala Arg Cys Glu Glu Ala Asn Leu Val Leu Asn Trp Glu Lys Cys
            180                 185                 190
His Phe Met Val Glu Glu Gly Ile Val Leu Ser His Lys Ile Ser Lys
        195                 200                 205
His Gly Ile Glu Val Asp Lys Ala Lys Ile Glu Val Ile Ser Arg Leu
    210                 215                 220
Leu Pro Pro Thr Ser Val Lys Gly Val Arg Ser Phe Leu Gly His Ala
225                 230                 235                 240
Gly Phe Tyr Trp Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250

<210> 50
<211> 762
<212> DNA
<213> Oryza sativa

<400> 50
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gtgcgtaagg aggtgtttaa gttcctgtat gccaggatta tttatctcgt accatacagc      60
gagtgggtta gcccagttca ggtcgtgcca aagaagggag gaatgacggc cgttgcaaat     120
gctcaaaatg aactaatccc gcaacgaacc gtaaccggat ggagaatgtg catcgattac     180
aggaaactta acaaggctac aaaaaaggat catttcccgc tacccttcat tgatgaaatg     240
ttggaacggc tggcaaatca ttccttcttc tgtttccttg atgggtattc aggatatcat     300
caaattccca tccatccgga ggaccagagt aagactacgt tcacatgtcc atatggcacc     360
tatgcgtatc gtaggatgcc ctttggactg tgcaacactc ctgcatcttt ccaaaggtgt     420
atgatgtcta ttttctcgga catgatcgag gatatcatgg aagtcttcat ggatgacttc     480
tcggtctatg gaaagacttt gggtcattgt ctgcagaatc tagacaaagt cttacaacga     540
tgccaagaaa aggacctagt gcttaactgg gaaaagtgcc atttcatggt ctgtgaaggg     600
atagttcttg ggcatcgagt gtccgaacga ggagtcgaag ttgatcgtgc taaaattgat     660
gtgatagatc agcttcctcc acccgtgaac atcaaaggaa tccgcagctt ctttggtcac     720
gctggctttt atagaaggtt catcaaggac ttcacaaaag tt                        762
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<210> 51
<211> 254
<212> PRT
<213> Oryza sativa

<400> 51

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Val Arg Lys Glu Val Phe Lys Phe Leu Tyr Ala Arg Ile Ile Tyr Leu
 1               5                  10                  15
Val Pro Tyr Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Thr Ala Val Ala Asn Ala Gln Asn Glu Leu Ile Pro Gln
        35                  40                  45
Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
    50                  55                  60
Lys Ala Thr Lys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
65                  70                  75                  80
Leu Glu Arg Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Gly Tyr His Gln Ile Pro Ile His Pro Glu Asp Gln Ser Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Thr Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile
    130                 135                 140
Phe Ser Asp Met Ile Glu Asp Ile Met Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Lys Thr Leu Gly His Cys Leu Gln Asn Leu Asp Lys
                165                 170                 175
Val Leu Gln Arg Cys Gln Glu Lys Asp Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Cys Glu Gly Ile Val Leu Gly His Arg Val Ser
        195                 200                 205
Glu Arg Gly Val Glu Val Asp Arg Ala Lys Ile Asp Val Ile Asp Gln
    210                 215                 220
Leu Pro Pro Pro Val Asn Ile Lys Gly Ile Arg Ser Phe Phe Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
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<210> 52
<211> 761
<212> DNA
<213> Oryza sativa

<400> 52
gtgcgcaagg aggttttgaa attgctgcat gccaggatta tctatcccgt accatacagt 60
gagagggtta gcccagtcca ggttgtgcca aagaagggag gaatggcggt cgttgcaaat 120
gctcagaatg aactaattac gcaacaaacc gtaaccggat ggaggatgtg tatcgattac 180
aggaaactca acaaggctac aaaaaaggat catttcccgc tacccttcat tgttgaaatg 240
ttggaacggc tggcaaatca ttccttcttt tgtttccttg atggatattt cggatatcat 300
caaattccca tccatccgga ggactagagt aagactacgt tcacatgtcc atatggcacc 360
tatgcgtatc ataggatgtc ctttggactg tgcaacgctc ctgcatcttt ccaaggtgta 420
tgatgtctat tttctcggac atgatcgagg atatcatgga agtcttcatg gatgacttct 480
cggtctatgg aaagactttc ggtcattgtc tgcaaaatct agacaaagtc ttacaacgat 540
gccaagaaaa ggacctggtg cttaactggg aaaagtgaca tttcatggtc cgtgaaggga 600
tagttcttgg gcatcgagtg ttcgaacaag gaatcgaagt tgatcatgct aaaattgatg 660
tgatagatca gcttcctcct cccgtgaaca tcaaaggtat ccgcagcttc ttgggtcatg 720
tcggctttta tagaaggttc atcaaggact tcactaaagt t 761

<210> 53
<211> 254
<212> PRT
<213> Oryza sativa

<400> 53
Val Arg Lys Glu Val Leu Lys Leu Leu His Ala Arg Ile Ile Tyr Pro
 1   5   10   15
Val Pro Tyr Ser Glu Arg Val Ser Pro Val Gln Val Val Pro Lys Lys
            20   25   30
Gly Gly Met Ala Val Val Ala Asn Ala Gln Asn Glu Leu Ile Thr Gln
        35   40   45
Gln Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
    50   55   60
Lys Ala Thr Lys Lys Asp His Phe Pro Leu Pro Phe Ile Val Glu Met
65   70   75   80
Leu Glu Arg Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr
                85   90   95
Phe Gly Tyr His Gln Ile Pro Ile His Pro Glu Asp Glx Ser Lys Thr
            100   105   110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr His Arg Met Ser Phe
        115   120   125
Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile
    130   135   140
Phe Ser Asp Met Ile Glu Asp Ile Met Glu Val Phe Met Asp Asp Phe
145   150   155   160
Ser Val Tyr Gly Lys Thr Phe Gly His Cys Leu Gln Asn Leu Asp Lys
                165   170   175
Val Leu Gln Arg Cys Gln Glu Lys Asp Leu Val Leu Asn Trp Glu Lys
            180   185   190
Glx His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Arg Val Phe
        195   200   205
Glu Gln Gly Ile Glu Val Asp His Ala Lys Ile Asp Val Ile Asp Gln
    210   215   220
Leu Pro Pro Pro Val Asn Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225   230   235   240
Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245   250

<210> 54
<211> 762

<212> DNA
<213> Oryza sativa

<400> 54
gtgcggaaag aggtttttaa gctcctgcat gccgggatta tttataccgt tccatgcagt 60
gagtgggtca gcacagtcca ggttgggccg aagatgggat gaatgacggt cgttgcaaat 120
gctcaaaata aacttatccc gcaaccaacc ataaccggat ggaggatgtg catagactac 180
aggaaactca acaaggctac aaaagaggat cattttccgc taccttcat tgatgaaatg 240
ttggaacgga tgacaaatca ttccttcttc tgtttccttg atgggtattc cggatatcat 300
caaattccca tccgtccaga ggaccagagt aagactacgt tcacatgtcc atatggcacc 360
tatgcgtatc gtaggatgtc cttcggactg tgcaacgctc ctgcatcttt ccaaaggtgt 420
atgttgtcta ttttctcgga catgatcgaa gatatcatga aagtcttcat ggatgacttc 480
tcagtttatg gaaagacttt cggtcattgt ctgtagaatc tagacaaagt cttacaacga 540
tgccaagaaa atgacctagt gtttaattgg gaaaagtgcc attttatggt ccgtgaaggg 600
atagttcttg ggcatcgagt atccgaatga ggaatcgaag ttgatcgtgc taaaatcgat 660
gttatagatc aaattcgtcc tcctgcgaat atcaaaggaa tccgcagctt cttgggacat 720
gccggctttt atagaaggtt cctcaaggac ttcacaaaag tt 762

<210> 55
<211> 254
<212> PRT
<213> Oryza sativa

<400> 55
Val Arg Lys Glu Val Phe Lys Leu Leu His Ala Gly Ile Ile Tyr Thr
1 5 10 15
Val Pro Cys Ser Glu Trp Val Ser Thr Val Gln Val Gly Pro Lys Met
20 25 30
Gly Glx Met Thr Val Val Ala Asn Ala Gln Asn Lys Leu Ile Pro Gln
35 40 45
Pro Thr Ile Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
50 55 60
Lys Ala Thr Lys Glu Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
65 70 75 80
Leu Glu Arg Met Thr Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Tyr His Gln Ile Pro Ile Arg Pro Glu Asp Gln Ser Lys Thr
100 105 110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Ser Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Leu Ser Ile
130 135 140
Phe Ser Asp Met Ile Glu Asp Ile Met Lys Val Phe Met Asp Asp Phe
145 150 155 160
Ser Val Tyr Gly Lys Thr Phe Gly His Cys Leu Glx Asn Leu Asp Lys
165 170 175
Val Leu Gln Arg Cys Gln Glu Asn Asp Leu Val Phe Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Arg Val Ser
195 200 205
Glu Glx Gly Ile Glu Val Asp Arg Ala Lys Ile Asp Val Ile Asp Gln
210 215 220
Ile Arg Pro Pro Ala Asn Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Leu Lys Asp Phe Thr Lys Val
245 250

<210> 56
<211> 762
<212> DNA
<213> Oryza sativa

<400> 56
gtgcgtaagg aggtcttgaa gctcttgcat gccgagatta tttatcccgt accatataga 60
gagtgggtta gcccggtcta ggttatgccg aagaagggac gaatgacggt cattgcaaat 120
gctcaaaatg aacttattcc gcaacgaaca gtaaccggat ggaggatgtg catagattac 180
atgaaactta acaaggctac gaaaaaggat catttcccac tacccttcat tgatgaaatg 240
ttggaacggc tggcaaatca ttctttcttc cgtttccttg atgggtattc taggtatgat 300
caaattccca tccatccgga ggaccaaagt aagactacgt tcacatgttc gtatgatacc 360
tatgcttatc gtaggatgtc cttcggactg tgcaacgctc ctgcatcttt ccaaaggtgt 420
atgatgtcta ttttctccga catgattaag gacattatgg aagtcttcat gcatgacttc 480
tctatttatg gaaagacctc cggtcattgt ctacaaaatt tagacaaaat tttgcaacga 540
tgccaagaga aggacctggt acttaattgg gaaaagtgtc atttcatggt ccgtgaaggg 600
atagttctta gtcatcgagt gtccgaataa ggaatcgaag ttgatcgtgc taaaaactat 660
gtaatagatt agcttccttc tcctgtgaac attaagggga tccgcaattt tttgggacat 720
gctggctttt atagaaggtt catcaaagac ttcacaaagg tt 762

<210> 57
<211> 254
<212> PRT
<213> Oryza sativa

<400> 57
Val Arg Lys Glu Val Leu Lys Leu Leu His Ala Glu Ile Ile Tyr Pro
1 5 10 15
Val Pro Tyr Arg Glu Trp Val Ser Pro Val Glx Val Met Pro Lys Lys
20 25 30
Gly Arg Met Thr Val Ile Ala Asn Ala Gln Asn Glu Leu Ile Pro Gln
35 40 45
Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Met Lys Leu Asn
50 55 60
Lys Ala Thr Lys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
65 70 75 80
Leu Glu Arg Leu Ala Asn His Ser Phe Phe Arg Phe Leu Asp Gly Tyr
85 90 95
Ser Arg Tyr Asp Gln Ile Pro Ile His Pro Glu Asp Gln Ser Lys Thr
100 105 110
Thr Phe Thr Cys Ser Tyr Asp Thr Tyr Ala Tyr Arg Arg Met Ser Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile
130 135 140
Phe Ser Asp Met Ile Lys Asp Ile Met Glu Val Phe Met His Asp Phe
145 150 155 160
Ser Ile Tyr Gly Lys Thr Ser Gly His Cys Leu Gln Asn Leu Asp Lys
165 170 175
Ile Leu Gln Arg Cys Gln Glu Lys Asp Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Arg Glu Gly Ile Val Leu Ser His Arg Val Ser
195 200 205
Glu Glx Gly Ile Glu Val Asp Arg Ala Lys Asn Tyr Val Ile Asp Glx
210 215 220
Leu Pro Ser Pro Val Asn Ile Lys Gly Ile Arg Asn Phe Leu Gly His
225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val

245 250

<210> 58
<211> 762
<212> DNA
<213> Hordeum vulgare

<400> 58
gtgcgcaagg aggtttagaa gttcctggaa gcaggtatca tctatcgtgt tgctcatagt 60
gattggttga gtcgggtgca ttgtgtccct aagaagggag gcattaccgt tgtccctaat 120
gataaggatg aattgatccc acagaggact attactggct ataggatggt gattgatttt 180
aggaaattga ataaagccac taggaaagat cattaccctt tgccttttat cgaccaaatg 240
cgagaaaggc tgtctaaaca cacacacttc tgctttctaa acggttattt tggtttctcc 300
caaataccag ttgcacaatc tgatcaggag aaaaccactt tcacctgccc ttttggtaca 360
tttgcttata gacgtatgac ttttggctta tgtaatgcac ctgcctcctt tcaaagatgt 420
atgatggcta tattccctga cttttgtgaa aagattgttg aggttttcat ggatgacttc 480
tccatttacg gatcttcctt tgatgattgc ctcagcaacc ttgatcgagt cttgcagaga 540
tgtaaagaca ccaatctttt cttgaattgg aagaagtgcc actttatggt taatgacggc 600
atcgtcttag gacataaatt ttctgaaaga ggtattgaag tcgataaggc taaggttgat 660
ggaatcgaga aaatgccata ccccacagat atcaaaggga taagaagttt ccttggtcat 720
gctggtttct atagaaggtt cataaaagac ttcactaagg tt 762

<210> 59
<211> 254
<212> PRT
<213> Hordeum vulgare

<400> 59
Val Arg Lys Glu Val Glx Lys Phe Leu Glu Ala Gly Ile Ile Tyr Arg
1 5 10 15
Val Ala His Ser Asp Trp Leu Ser Arg Val His Cys Val Pro Lys Lys
20 25 30
Gly Gly Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln
35 40 45
Arg Thr Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
50 55 60
Lys Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65 70 75 80
Arg Glu Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asn Gly Tyr
85 90 95
Phe Gly Phe Ser Gln Ile Pro Val Ala Gln Ser Asp Gln Glu Lys Thr
100 105 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Thr Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ala Ile
130 135 140
Phe Pro Asp Phe Cys Glu Lys Ile Val Glu Val Phe Met Asp Asp Phe
145 150 155 160
Ser Ile Tyr Gly Ser Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg
165 170 175
Val Leu Gln Arg Cys Lys Asp Thr Asn Leu Phe Leu Asn Trp Lys Lys
180 185 190
Cys His Phe Met Val Asn Asp Gly Ile Val Leu Gly His Lys Phe Ser
195 200 205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Gly Ile Glu Lys
210 215 220
Met Pro Tyr Pro Thr Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His

225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 60
<211> 762
<212> DNA
<213> Hordeum vulgare

<400> 60
gtgcgtaaag aggtcctaaa gttcctggaa gcgggtatta tctatcctgt tgctcacaac 60
gattgggtga gtccggtgca ttgcgtccct aagaagggat gcattaccgt tgtccctaat 120
gataaggatg aattgatccc acataggatt attactggct ataggatggt gatcgatttt 180
aggaaaatga ataaagccac taggaaagaa cattaccctt tgccttttag cgaccaaatg 240
ctagaaaggt tgtctaaaca cacacacttc tgctttctag acggttattc tagtttctcc 300
caaatactag ttgcacaatc tgatcaggag aaaaccactt tcacctaccc gttcggtacc 360
tttgcttata gacgtatgcc ttttggctta tgtaatgcac ctgccacctt tcaaagatgt 420
atgatggcta tattctctga cttttgtgaa aagtttgtcg aggttttcat ggatgacttt 480
tccgtttacg gatcttcctt tgatgattgc ctcaacaacc ttgatcgggt cttgcagaga 540
tgtaaagata ctaatcttgt cttgaattgg gagaagtgcc actttatggt taatgaaggc 600
atcgtcttag gacataaaat ttccgaaaga ggtattgaat tcgataaggc taaggttggt 660
gcaatcaaga aaatgccata ccccacagat atcaaaggta taagaagttt cttggtccat 720
gctggtttct atagaaggtt catcaaggac tttacaaagg tt 762

<210> 61
<211> 254
<212> PRT
<213> Hordeum vulgare

<400> 61
Val Arg Lys Glu Val Leu Lys Phe Leu Glu Ala Gly Ile Ile Tyr Pro
1 5 10 15
Val Ala His Asn Asp Trp Val Ser Pro Val His Cys Val Pro Lys Lys
20 25 30
Gly Cys Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro His
35 40 45
Arg Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Met Asn
50 55 60
Lys Ala Thr Arg Lys Glu His Tyr Pro Leu Pro Phe Ser Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Ser Phe Ser Gln Ile Leu Val Ala Gln Ser Asp Gln Glu Lys Thr
100 105 110
Thr Phe Thr Tyr Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
130 135 140
Phe Ser Asp Phe Cys Glu Lys Phe Val Glu Val Phe Met Asp Asp Phe
145 150 155 160
Ser Val Tyr Gly Ser Ser Phe Asp Asp Cys Leu Asn Asn Leu Asp Arg
165 170 175
Val Leu Gln Arg Cys Lys Asp Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205
Glu Arg Gly Ile Glu Phe Asp Lys Ala Lys Val Gly Ala Ile Lys Lys

```
    210                 215                 220
Met Pro Tyr Pro Thr Asp Ile Lys Gly Ile Arg Ser Phe Leu Val His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 62
<211> 757
<212> DNA
<213> Hordeum vulgare

<400> 62

```
gaaaagaggt tgtgaagctc ctggatgaag gtattatcta tcatgttgct catagcgatt      60
gggtgagtcc ggtgcatagc gttcctaaga agggaggcat taccgttgtc cctaatgata     120
aggatgaatt gatcccgcag aggattatca ctggctatag gatggtgatc gatttcagga     180
aactgaataa agccactagg aaagatcatt acccttgcc ttttatcgac catatgctag     240
aaaggttgtc caaactcaca cacttctgct ttctagacgg ttattctagt ttctcccaaa     300
taccagttgc acaatctgat caggagaaaa ccactttcac ctgccctttc ggtaccttg      360
cttatagacg tatgcctttt ggcttatgta atgcacctgc caccttcaa agatgtatga      420
tggctatatt ctctaacttt tgtgaaaata ttgtcgaggt tttcatggat gacttttccg     480
tttacgggtc ttcttttgat gattgcctca gcaaccttga tcgagtctta cagagatgta     540
aagacaccaa tcttgtcttg aatggggaga agtgccactt tatggttaat gaaggcatcg     600
tcttaggaca taaaatttct gaaagaggta ttgaagtcga taaggctaag gttgatgcaa     660
tcgacaaaat gccatacccc acagatatca aaggtataag aagtttcctt ggtcatggtg     720
gtttctatag aaggtttatc aaagatttca caaaggt                              757
```

<210> 63
<211> 251
<212> PRT
<213> Hordeum vulgare

<400> 63

```
Lys Glu Val Val Lys Leu Leu Asp Glu Gly Ile Ile Tyr His Val Ala
 1               5                  10                  15
His Ser Asp Trp Val Ser Pro Val His Ser Val Pro Lys Lys Gly Gly
            20                  25                  30
Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln Arg Ile
        35                  40                  45
Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn Lys Ala
    50                  55                  60
Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Ile Asp His Met Leu Glu
65                  70                  75                  80
Arg Leu Ser Lys Leu Thr His Phe Cys Phe Leu Asp Gly Tyr Ser Ser
                85                  90                  95
Phe Ser Gln Ile Pro Val Ala Gln Ser Asp Gln Glu Lys Thr Thr Phe
            100                 105                 110
Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe Gly Leu
        115                 120                 125
Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile Phe Ser
    130                 135                 140
Asn Phe Cys Glu Asn Ile Val Glu Val Phe Met Asp Asp Phe Ser Val
145                 150                 155                 160
Tyr Gly Ser Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg Val Leu
                165                 170                 175
Gln Arg Cys Lys Asp Thr Asn Leu Val Leu Asn Gly Glu Lys Cys His
            180                 185                 190
Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser Glu Arg
```

```
        195                 200                 205
Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Ile Asp Lys Met Pro
    210                 215                 220
Tyr Pro Thr Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His Gly Gly
225                 230                 235                 240
Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys
                245                 250
```

<210> 64
<211> 740
<212> DNA
<213> Hordeum vulgare

<400> 64

```
gtgcgtaaag aggtgattaa attcctagaa gaaggtatta tctatcctgt tgctcacagc      60
gattgggtga gtccggtgca ttgcattcct aagaaaggag gcattaccgt tgtccctaat     120
gataaggatg aattgatccc atagaggatt attactggct ataggatggt gattgatttt     180
aggaagttga ataaagccac taggaaagat cattacccct tgccttttat cgaccaaatg     240
ctagaaaggc tgtctaaaca cacacacttc ttgtttctgg acggttatac tggtttctcc     300
caaataccag ttgcacaatt tgatcaggag aaaaccactt taacctgaca tttcggtacc     360
tttgcttata tacgtatgcc ttttggcttg tgtaatgcac ctgccacctt tcaaagatgt     420
atgatggcta tattctccga cttctgtgaa aagattgtca atgttttcat ggataacttc     480
tccgtttacg ggtgttcctt tgatgattgc ctcaacaacg ttgatcgagt cttacagaga     540
tgtaaggaca ccaatgttgt cttgaattgg gagaagtgtc actttatggt taatgaaggc     600
atcgtcttag gacataagat ttctgaaaga ggtattaaag ttgataaggc taaggttgat     660
gcaatcgaga aaatgccata tccacagata tcaaaggtat aagaagtttc cttggtcatg     720
ctggtttcta tagaaggttc                                                740
```

<210> 65
<211> 247
<212> PRT
<213> Hordeum vulgare

<400> 65

```
Val Arg Lys Glu Val Ile Lys Phe Leu Glu Glu Gly Ile Ile Tyr Pro
 1               5                  10                  15
Val Ala His Ser Asp Trp Val Ser Pro Val His Cys Ile Pro Lys Lys
            20                  25                  30
Gly Gly Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Glx
        35                  40                  45
Arg Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
    50                  55                  60
Lys Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Leu Ser Lys His Thr His Phe Leu Phe Leu Asp Gly Tyr
                85                  90                  95
Thr Gly Phe Ser Gln Ile Pro Val Ala Gln Phe Asp Gln Glu Lys Thr
            100                 105                 110
Thr Leu Thr Glx His Phe Gly Thr Phe Ala Tyr Ile Arg Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
    130                 135                 140
Phe Ser Asp Phe Cys Glu Lys Ile Val Asn Val Phe Met Asp Asn Phe
145                 150                 155                 160
Ser Val Tyr Gly Cys Ser Phe Asp Asp Cys Leu Asn Asn Val Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Lys Asp Thr Asn Val Val Leu Asn Trp Glu Lys
```

```
            180                 185                 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195                 200                 205
Glu Arg Gly Ile Lys Val Asp Lys Ala Lys Val Asp Ala Ile Glu Lys
    210                 215                 220
Met Pro Tyr Pro Thr Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe
                245
```

<210> 66
<211> 762
<212> DNA
<213> Avena sativa

<400> 66

```
gtgcgaaagg aggttttcaa gctcatggat gctggtatta tttaccctat tgctgatagt      60
gaatgggtta gtcatgttca ttgtgttcct aaaaagggag gtattaccgt tgtccctaat     120
gataatgatg agcttattcc tcaaagaata gtggtaggct ataggatgtg catcgatttt     180
aggaaagtca ataaagttac taagaaagat cactacccgc ttccttttat tgatcaaatg     240
ttggaaagat tttctaaaaa gacccatttt tgttttcttg atggttattc tggtttctct     300
caaattgttg ttaaacaaca agatcaagaa aaaactactt ttacttgccc ttatggaact     360
tatgcttata gatgtatgcc ttttggttta tgtaatgctc cttctacttt cctaaggtgc     420
atgtctgcta tctttcatgg tttttgtgag gaaattgtag aagtgttcat ggacgacttt     480
tctgtctacg gaacttcttt tgataattgt ctgcacaacc ttgataaagt tttacagaga     540
tgtgaaggaa ctaatcttgt tcttaattgg gagaaatgcc acttcatggt taatgaaggg     600
attgttcttg ggcataaagt ttctaaaaga ggcatagaag ttgatagagc taaggttgag     660
gcaattgaga agatgccatg tccaagagac atcaaaggta ttcgtagtat ccttggtcat     720
gctggtttct ataggaggtt catcaaagac ttcacaaagg tt                        762
```

<210> 67
<211> 254
<212> PRT
<213> Avena sativa

<400> 67

```
Val Arg Lys Glu Val Phe Lys Leu Met Asp Ala Gly Ile Ile Tyr Pro
 1               5                  10                  15
Ile Ala Asp Ser Glu Trp Val Ser His Val His Cys Val Pro Lys Lys
            20                  25                  30
Gly Gly Ile Thr Val Val Pro Asn Asp Asn Asp Glu Leu Ile Pro Gln
        35                  40                  45
Arg Ile Val Val Gly Tyr Arg Met Cys Ile Asp Phe Arg Lys Val Asn
    50                  55                  60
Lys Val Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Phe Ser Lys Lys Thr His Phe Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Gly Phe Ser Gln Ile Val Val Lys Gln Gln Asp Gln Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Cys Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ser Thr Phe Leu Arg Cys Met Ser Ala Ile
    130                 135                 140
Phe His Gly Phe Cys Glu Glu Ile Val Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Thr Ser Phe Asp Asn Cys Leu His Asn Leu Asp Lys
```

```
                165                 170                 175
Val Leu Gln Arg Cys Glu Gly Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser
        195                 200                 205
Lys Arg Gly Ile Glu Val Asp Arg Ala Lys Val Glu Ala Ile Glu Lys
    210                 215                 220
Met Pro Cys Pro Arg Asp Ile Lys Gly Ile Arg Ser Ile Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 68
<211> 762
<212> DNA
<213> Avena sativa

<400> 68

```
gtgcgcaaag aggtctttaa gttccttgat gctggtatta tttaccctat tgctgatagt      60
caatgggtta gccttgttca ttgtgtcccc aagaaagggg gaataactgt tgtgcctaat     120
gaagataatg agcttatacc ccaaagagta gtggttgtgt atagaatgtg cattgatttt     180
agaaggatta ataaagttac taggaaagat cattatcctt tgccctttat tgatcaaatg     240
cttgagaggt tgtccaaaaa gactcacttt tgttttcttg atggtcattc tgggttttct     300
caaattgttg tgaaagcaca agaccaagag aaaactactt tcacttgtcc ttatggtact     360
tatgattata ggcgtatgcc ttttggttta tgtaatgctc ctgctacctt tcagagatgt     420
atgtctgcta tatttcatgg tttttgtgaa gaaattgtgg aggttttcat ggacgatttt     480
tctgtctatg gaacttcttt tgataactgt ttgcacaacc ttgataaatt tttgcagaga     540
tttgaagaaa ccaaccttgt tcttaattgg gagaaatgcc atttcatggt taatgaaggg     600
attgttcttg gacacaagat ctcagaaaga ggcattgaag ttgacagagc caaaattgaa     660
gcaattgaga acatgccttg ccctagagat attaaaggta ttcgtagtat ccttggtcat     720
gctggtttct atagtaggtt catcaaagac tttacaaaag tt                        762
```

<210> 69
<211> 254
<212> PRT
<213> Avena sativa

<400> 69

```
Val Arg Lys Glu Val Phe Lys Phe Leu Asp Ala Gly Ile Ile Tyr Pro
 1               5                  10                  15
Ile Ala Asp Ser Gln Trp Val Ser Leu Val His Cys Val Pro Lys Lys
            20                  25                  30
Gly Gly Ile Thr Val Val Pro Asn Glu Asp Asn Glu Leu Ile Pro Gln
        35                  40                  45
Arg Val Val Val Val Tyr Arg Met Cys Ile Asp Phe Arg Arg Ile Asn
    50                  55                  60
Lys Val Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Leu Ser Lys Lys Thr His Phe Cys Phe Leu Asp Gly His
                85                  90                  95
Ser Gly Phe Ser Gln Ile Val Val Lys Ala Gln Asp Gln Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Asp Tyr Arg Arg Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Ser Ala Ile
    130                 135                 140
Phe His Gly Phe Cys Glu Glu Ile Val Glu Val Phe Met Asp Asp Phe
```

```
145                 150                 155                 160
Ser Val Tyr Gly Thr Ser Phe Asp Asn Cys Leu His Asn Leu Asp Lys
                165                 170                 175
Phe Leu Gln Arg Phe Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195                 200                 205
Glu Arg Gly Ile Glu Val Asp Arg Ala Lys Ile Glu Ala Ile Glu Asn
    210                 215                 220
Met Pro Cys Pro Arg Asp Ile Lys Gly Ile Arg Ser Ile Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Ser Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 70
<211> 756
<212> DNA
<213> Avena sativa

<400> 70

```
aaggaggttt ttaaactcct tgatgttggt attatttacc ctattgctga tagtgaatgg      60
gttagtcttg ttcattgtgt tcctaaaaag ggaggtatta ccgttgttcc taatgataat     120
gatgagctta ttcctcaaag aatagtggta ggctatagga tgtgcataga ttttaggaaa     180
gttaataaag ttactaagaa agatcactac ccgcttcctt ttattgatca aatgttggaa     240
aggttgtcta aaaagaccca tttttgtttt cttgatggtt actctagctt ctctcaaatt     300
gctgttaaac aacaagatca agaaaaaact acttttactt gcccttatgg aacttttgct     360
tatagacgta tgcctattgg tttatgtaat gctcctgcta cttttcaaag gtgtatgtct     420
gctatatttc atggtttttg tgaggaaatt gtagaagtgt tcatggatga cttttctgtc     480
tatggaactt cttttgataa ttgcctgcac aaccttgata aagttttgca gagatgtgaa     540
gaaactaata ttgttcttaa ttgggagaaa ttccacttca tggttaatga agggattgtc     600
cttgggcata aagtttctaa aagaggcata gaagttgata gagctaaggt tgaggcaatt     660
gagaagatgc catgcccaag agacatcaaa ggtatacgta gtatccttgg tcatgctggt     720
ttctatagaa ggtttatcaa agacttcaca aaggtt                               756
```

<210> 71
<211> 252
<212> PRT
<213> Avena sativa

<400> 71

```
Lys Glu Val Phe Lys Leu Leu Asp Val Gly Ile Ile Tyr Pro Ile Ala
 1               5                  10                  15
Asp Ser Glu Trp Val Ser Leu Val His Cys Val Pro Lys Lys Gly Gly
            20                  25                  30
Ile Thr Val Val Pro Asn Asp Asn Asp Glu Leu Ile Pro Gln Arg Ile
        35                  40                  45
Val Val Gly Tyr Arg Met Cys Ile Asp Phe Arg Lys Val Asn Lys Val
    50                  55                  60
Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met Leu Glu
65                  70                  75                  80
Arg Leu Ser Lys Lys Thr His Phe Cys Phe Leu Asp Gly Tyr Ser Ser
                85                  90                  95
Phe Ser Gln Ile Ala Val Lys Gln Gln Asp Gln Glu Lys Thr Thr Phe
            100                 105                 110
Thr Cys Pro Tyr Gly Thr Phe Ala Tyr Arg Arg Met Pro Ile Gly Leu
        115                 120                 125
Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Ser Ala Ile Phe His
```

```
    130                 135                 140
Gly Phe Cys Glu Glu Ile Val Glu Val Phe Met Asp Asp Phe Ser Val
145                 150                 155                 160
Tyr Gly Thr Ser Phe Asp Asn Cys Leu His Asn Leu Asp Lys Val Leu
                165                 170                 175
Gln Arg Cys Glu Glu Thr Asn Ile Val Leu Asn Trp Glu Lys Phe His
            180                 185                 190
Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser Lys Arg
        195                 200                 205
Gly Ile Glu Val Asp Arg Ala Lys Val Glu Ala Ile Glu Lys Met Pro
    210                 215                 220
Cys Pro Arg Asp Ile Lys Gly Ile Arg Ser Ile Leu Gly His Ala Gly
225                 230                 235                 240
Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 72
<211> 748
<212> DNA
<213> Secale cereale

<400> 72

```
gtgcggaaag aggtctttaa actcctagag gcaggtatta actatcccat tgctgatagc      60
cagcgggtaa gtcatgtcca ttgtgttcct aagaaaggag gtatgactgt cgtccctaag     120
gataaagatg aatttatccc gcaaagaata gttacaggtt ataggatggt aattgatttt     180
cgtaagttaa ataaagctac tatgaaagat cattacccct tgccatttat tgatcaaatg     240
ccagacaggt tatccaaaca tactcatttc tgctttctag atggttattc tggtttctct     300
caaatacctt tgtcaaaggg ggatcaagaa aagaccacct ttacttgtcc tttcggtacc     360
tttgcttata gaggtatgcc ttttggttta tgtaatgcac ctgctacctt tcaaagatgt     420
atgatcgtta tattctctgt ctttttttgaa aagattgttg aggtattcat ggatgatttc     480
tccgtttatg gaacttcttt tgatgattgc ttaagcaacc ttgatcgagt tttgcagaga     540
tgtgaagata ctaaccttgt cttgaattgg gagaagtgcc actttatggt taatgaaggc     600
attttcttgg gacataaaat ttctgaaaga ggtactgaag ttgagaaagc taaagtggat     660
gctattgaaa agatgccatg ccctaaggat atgaaaggta tacgaagttt ccttggtcac     720
gctgggtttt ataggaggtt cataaaag                                        748
```

<210> 73
<211> 249
<212> PRT
<213> Secale cereale

<400> 73

```
Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Ile Asn Tyr Pro
 1               5                  10                  15
Ile Ala Asp Ser Gln Arg Val Ser His Val His Cys Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Thr Val Val Pro Lys Asp Lys Asp Glu Phe Ile Pro Gln
        35                  40                  45
Arg Ile Val Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
    50                  55                  60
Lys Ala Thr Met Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65                  70                  75                  80
Pro Asp Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Gly Phe Ser Gln Ile Pro Leu Ser Lys Gly Asp Gln Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Gly Met Pro Phe
```

```
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Ile Val Ile
    130                 135                 140
Phe Ser Val Phe Phe Glu Lys Ile Val Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Thr Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Asp Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Asn Glu Gly Ile Phe Leu Gly His Lys Ile Ser
        195                 200                 205
Glu Arg Gly Thr Glu Val Glu Lys Ala Lys Val Asp Ala Ile Glu Lys
    210                 215                 220
Met Pro Cys Pro Lys Asp Met Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys
                245
```

<210> 74
<211> 762
<212> DNA
<213> Secale cereale

<400> 74

```
gtgcggaagg aggtcgttaa gcttccagag gcaggtatta tctatcccgt tgctgatagc      60
cagtgggtaa gtcatgtcca ttgtgtccct aagaagggag gtatgactgt cgttcctaat     120
gacaaacatg aattgatccc gcaaagaata gttacaggtt ataggatggt aattgatttc     180
cgtaagttaa ataaagctac taagaaagat cattacccct tgccatttat tgatcaaatg     240
ctagacaggt tatccaaaca tactcatttt tgctttctag atggttatta tggtttctct     300
caaatacctg tgtcaaaagg ggatcaagaa aagaccactt tcacttgtcc tttcggtacc     360
tttgcttata gacgtatgcc ttttggttta tgtaatgcac ctgctacctt tcaaagatgt     420
atgatggcta tattatctga tttttgagaa aagattgttg aggttttcat ggatgatttc     480
tccgtttacg gaacttcttt tgatgactac ttaagcaaca atgatcgagt tttgcagaga     540
tgtgaagaca ctaatcttgt tttgaattgg gagaagtgcc actttatggt taatgaaggc     600
attgtcttgg gacaaaaaat ttctgaaaga ggtattgaag ttgacaaagc taaagtcgat     660
gctgttgaaa agatgccatg ccccaaggac atcaaaggta tacgaagttt ccttggtcat     720
gttgggtttt ataggaggtt catcaaagac ttcacgaaag tt                        762
```

<210> 75
<211> 254
<212> PRT
<213> Secale cereale

<400> 75

```
Val Arg Lys Glu Val Val Lys Leu Pro Glu Ala Gly Ile Ile Tyr Pro
 1               5                  10                  15
Val Ala Asp Ser Gln Trp Val Ser His Val His Cys Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Thr Val Val Pro Asn Asp Lys His Glu Leu Ile Pro Gln
        35                  40                  45
Arg Ile Val Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
    50                  55                  60
Lys Ala Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65                  70                  75                  80
Leu Asp Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Tyr Gly Phe Ser Gln Ile Pro Val Ser Lys Gly Asp Gln Glu Lys Thr
```

```
            100                 105                 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
    130                 135                 140
Leu Ser Asp Phe Glx Glu Lys Ile Val Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Thr Ser Phe Asp Asp Tyr Leu Ser Asn Asn Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Asp Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly Gln Lys Ile Ser
        195                 200                 205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Val Glu Lys
    210                 215                 220
Met Pro Cys Pro Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 76
<211> 762
<212> DNA
<213> Secale cereale

<400> 76

```
gtgcgtaagg aggtggttaa gctcctagaa gcaggtatta tctatccagt tgctgatagt      60
cagtgggtaa gtcatgtcca ttatgttcct aagaaaggag gtatgactgt tgtccctaat     120
gataaagatg aattgatccc gcaaagaata gttacaggtt ataggatggt aagtgatttc     180
cgtaagttga ataaagccac taagaaagat cattacccct tgccatttat tgatcaaatg     240
ctagaaaggt tatccaaaca tactcatttc ttctttctag atggttattc tggtttctct     300
caaatacctg tgtcaaaagg ggatcaagaa aagaccacct ttacttgtac tttcggtacc     360
tttgcttata gacgtatgcc ttttggttta tgtaatgcac ctgctacctt tcaaagatgc     420
atgatggcta tattctctga cttttgtgaa aagattgttg aggtattcat ggatgatttc     480
tccgtttacg gaacttcttt tgatgattgc ttaagcaacc ttgatcgagt tttgcagaga     540
tgtgaagaca ctaaccttgt cttgaattgc gagaagtgcc actttatggt taatgaaggc     600
attgtcttgg gacataaaat ttctgaaata ggtattgaag ttgacaaagc taaagttgat     660
gctattgaaa agatgccatg cgcaaaggac atcaaaggta tacggagttt ccttggtcat     720
gccgggtttt ataggaggtt catcaaagat ttctcaaagg tt                        762
```

<210> 77
<211> 254
<212> PRT
<213> Secale cereale

<400> 77

```
Val Arg Lys Glu Val Val Lys Leu Leu Glu Ala Gly Ile Ile Tyr Pro
 1               5                  10                  15
Val Ala Asp Ser Gln Trp Val Ser His Val His Tyr Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln
        35                  40                  45
Arg Ile Val Thr Gly Tyr Arg Met Val Ser Asp Phe Arg Lys Leu Asn
    50                  55                  60
Lys Ala Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Leu Ser Lys His Thr His Phe Phe Phe Leu Asp Gly Tyr
```

```
                85                  90                  95
Ser Gly Phe Ser Gln Ile Pro Val Ser Lys Gly Asp Gln Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Thr Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
    130                 135                 140
Phe Ser Asp Phe Cys Glu Lys Ile Val Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Thr Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Asp Thr Asn Leu Val Leu Asn Cys Glu Lys
            180                 185                 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195                 200                 205
Glu Ile Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Ile Glu Lys
    210                 215                 220
Met Pro Cys Ala Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Ser Lys Val
                245                 250
```

<210> 78
<211> 759
<212> DNA
<213> Secale cereale

<400> 78

```
gtgcgcaagg aagtttttaa gtttctagag gcaggtataa tctatccagt tgctgatagc      60
cagtgggtaa gtcctgtcca ttgtgtccct aagaagggag gtatgactgt agttcctaat     120
gataaagatg aattgatctc gcaaagaatt gttacaggtt ataggatggt aattgatttt     180
cgcaaattaa ataaagccac taagaaagat caataccctt tgccttttat tgatcaaatg     240
ctagaaaggt tatccaaaca cacccatttt tgctttctag atggttattc tagtttctct     300
caaataccta tgtcaaaagg ggataaagaa aagaccactt ttacttgtcc ctttggtact     360
ttgcttatag acgtatgcct tttggtttat gtaatgcatc tgctaccttt caaacatgca     420
tgatggctat actctatgat ttttgtgaaa gaatgttgat gttttcatgg atgatttttg     480
tatttacgaa acttcttttg atgattgctt gagcaacctt gatcgagttt tgcagagatg     540
tgaagaaact aatcttgtct tgaactggga aaagtcccac tttatggtta atgaaggcat     600
tgcttgggac ataaaatttc tgaaagaggt accgaagttg acaaagctaa agttgatgct     660
gttgaaaaga tgccatgtcc caaggacatc aaaggtataa gaagtttcct tggtcatgcc     720
gggttttata ggaggtttat caaggacttc accaaggtt                            759
```

<210> 79
<211> 254
<212> PRT
<213> Secale cereale

<400> 79

```
Val Arg Lys Glu Val Phe Lys Phe Leu Glu Ala Gly Ile Ile Tyr Pro
 1               5                  10                  15
Val Ala Asp Ser Gln Trp Val Ser Pro Val His Cys Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Ser Gln
        35                  40                  45
Arg Ile Val Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
    50                  55                  60
Lys Ala Thr Lys Lys Asp Gln Tyr Pro Leu Pro Phe Ile Asp Gln Met
```

```
65                  70                  75                  80
Leu Glu Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Ser Phe Ser Gln Ile Pro Met Ser Lys Gly Asp Lys Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Ser Ala Thr Phe Gln Thr Cys Met Met Ala Ile
    130                 135                 140
Leu Tyr Asp Phe Cys Glu Arg Ile Val Asp Val Phe Met Asp Asp Phe
145                 150                 155                 160
Cys Ile Tyr Glu Thr Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Ser His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195                 200                 205
Glu Arg Gly Thr Glu Val Asp Lys Ala Lys Val Asp Ala Val Glu Lys
    210                 215                 220
Met Pro Cys Pro Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 80
<211> 761
<212> DNA
<213> Triticum aestivum

<400> 80

```
gtgcgtaagg aggttctcaa gtttctggag gtaggtataa tttatcccgt tgctgatagt      60
cagtgggtaa gtcctgtcca ttgtgtccct aagaagggag gtattactgt tgtccctaat     120
gataaagatg aattgattcc tcaaagaatt attacggtta taggatggta attgatttcc     180
gcaaattaaa taaagccact aagagagatc attacccctt acctttttatt gatcaaattc     240
tagaaagatt atgcaaacat acacattatt gcttccaaga tggttatcct ggtttttctc     300
aaatacctgt gtcggctaaa gatcaatcaa agactacttt tacatgccct tttggtactt     360
ttgcttatag atgtatgcct tttggtttat gtaatgcacc tgctaccttt caaagatgca     420
tgatggctat attctctgat ttttgtgaaa agatttgtga ggttttcatg gatgactttt     480
ccgtctatgg ttcctctttt gatgattgct tgagcaatct tgatcgagtt ttgcagagat     540
gtgaagaaac taatcttgtc ttgaattggg aaaagtgtca ctttatggtt aatgaaggta     600
ttgtcttggg gcacaaagtt tctgaaagag gtattgaagt tgataaagcc aaggttgaca     660
ctattgaaaa gataccatgt cccaaggaca tcaaaggtac aagaagtttc cttggtcacg     720
ccggatttta taggaggttc ataaaagatt tcacaaaggt t                         761
```

<210> 81
<211> 254
<212> PRT
<213> Triticum aestivum

<400> 81

```
Val Arg Lys Glu Val Leu Lys Phe Leu Glu Val Gly Ile Ile Tyr Pro
 1               5                  10                  15
Val Ala Asp Ser Gln Trp Val Ser Pro Val His Cys Val Pro Lys Lys
            20                  25                  30
Gly Gly Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln
        35                  40                  45
Arg Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
```

```
    50                  55                  60
Lys Ala Thr Lys Arg Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Ile
65                  70                  75                  80
Leu Glu Arg Leu Cys Lys His Thr His Tyr Cys Phe Gln Asp Gly Tyr
                85                  90                  95
Pro Gly Phe Ser Gln Ile Pro Val Ser Ala Lys Asp Gln Ser Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Cys Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
    130                 135                 140
Phe Ser Asp Phe Cys Glu Lys Ile Cys Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Ser Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser
        195                 200                 205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Thr Ile Glu Lys
    210                 215                 220
Ile Pro Cys Pro Lys Asp Ile Lys Gly Thr Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 82
<211> 780
<212> DNA
<213> Triticum aestivum

<400> 82

```
gtgcggaagg aggtgtttaa gctccttgag gcaggtataa tttatcccgt tgctgatagt      60
aagtgggtaa ttcctgtcca ttaagtgatc gtgattactg ttgttcctaa gaagggaggt     120
attaccgttg ttcctaatga taaagatgaa ttgattcctc aaagaaccat tactggttat     180
aggatggtaa ttgatttccg caaattaaat aaggctacta aaaaatatca ttacccctta     240
ccttttatcg atcaaatgct agaaagatta tccaaacata cacatttttg ctttctagat     300
ggttactctg gtttctctca aatacctgtg tcagccaaag atcaatcaaa gactactttt     360
acatgccctt ttggtacttt tgcttataga cgtatgcctt ttggtttatg taatgcacct     420
gctacctttc aaagatacat gatggctata ttatctgact tttgtgaaaa gatttgtgag     480
gttttcatgg acgactcttc catctatgga tcttcttttg atgattgctt gagcaacctt     540
gatcgagttt tgcagagatg tgaagaaact tatcttgtct tgaattggga aaagtgccaa     600
tttatggtta atgaaggtat tgtcctgggg cataaagttt ctgaaagagg tattcgagtt     660
gataaagcca aggttgatgc tattgaaaag atgccatgtc ccatggacat caaaggtata     720
agaagtttcc ttggtcatgc cggtttttat aggaggttca taaaagactt cacgaaggtt     780
```

<210> 83
<211> 260
<212> PRT
<213> Triticum aestivum

<400> 83

```
Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Ile Ile Tyr Pro
 1               5                  10                  15
Val Ala Asp Ser Lys Trp Val Ile Pro Val His Glx Val Ile Val Ile
            20                  25                  30
Thr Val Val Pro Lys Lys Gly Gly Ile Thr Val Val Pro Asn Asp Lys
```

```
        35                  40                  45
Asp Glu Leu Ile Pro Gln Arg Thr Ile Thr Gly Tyr Arg Met Val Ile
    50                  55                  60
Asp Phe Arg Lys Leu Asn Lys Ala Thr Lys Lys Tyr His Tyr Pro Leu
65                  70                  75                  80
Pro Phe Ile Asp Gln Met Leu Glu Arg Leu Ser Lys His Thr His Phe
                85                  90                  95
Cys Phe Leu Asp Gly Tyr Ser Gly Phe Ser Gln Ile Pro Val Ser Ala
            100                 105                 110
Lys Asp Gln Ser Lys Thr Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala
        115                 120                 125
Tyr Arg Arg Met Pro Phe Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln
    130                 135                 140
Arg Tyr Met Met Ala Ile Leu Ser Asp Phe Cys Glu Lys Ile Cys Glu
145                 150                 155                 160
Val Phe Met Asp Asp Ser Ser Ile Tyr Gly Ser Ser Phe Asp Asp Cys
                165                 170                 175
Leu Ser Asn Leu Asp Arg Val Leu Gln Arg Cys Glu Glu Thr Tyr Leu
            180                 185                 190
Val Leu Asn Trp Glu Lys Cys Gln Phe Met Val Asn Glu Gly Ile Val
        195                 200                 205
Leu Gly His Lys Val Ser Glu Arg Gly Ile Arg Val Asp Lys Ala Lys
    210                 215                 220
Val Asp Ala Ile Glu Lys Met Pro Cys Pro Met Asp Ile Lys Gly Ile
225                 230                 235                 240
Arg Ser Phe Leu Gly His Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp
                245                 250                 255
Phe Thr Lys Val
            260
```

<210> 84
<211> 762
<212> DNA
<213> Triticum aestivum

<400> 84

```
gtgcgtaagg aggtattcaa gcttctggag gcaggtataa tttatcccgt tgttgatagt      60
caatgggtaa gtcctgtcca ttgtgtcctt aagaagggag gtattactgt tgtccctaat     120
gataaagatg aattgattcc gcaaagaatt atcacaggtt ataggatggt aattgatttc     180
cgtaagttaa ataaagctac taagaaagat cattacccct tacctttttat tgatcaaatg     240
ttagaaagat tatgcaaaca tacacattat tgctttctag atggttattc tggtttctct     300
caaatacctg tgtcagctaa ggatcaatca aagactactt ttacatgccc ttttggtact     360
tttggttata gacgtatgcc tttcgattta tgtaatgcac ctgctacctt tcaaatatgc     420
atgatggcta tattctctga cttttgcgaa aagatttgtg aggttttcat ggacgacttt     480
tccgtctatg gttcctctta tgatgattgc ttgagcaatc ttaatcgagt tttgcagaga     540
tgtgaagaaa ctaatcttgt cttgaattgg gaaaagtgcc actttatggt taatgaaggt     600
attgtcttgg ggcacaaagt ttctgaacga ggtattgaag ttgataaggc caaggttgat     660
gctattgaaa agatgacatg tcccaaggac atcaaaggta taagaagttt ccttggtcac     720
gccagatttt ataggaggtt cataaaagac ttcacaaagg tt                        762
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<210> 85
<211> 254
<212> PRT
<213> Triticum aestivum

<400> 85

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Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Ile Ile Tyr Pro
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 1               5                  10                  15
Val Val Asp Ser Gln Trp Val Ser Pro Val His Cys Val Leu Lys Lys
            20                  25                  30
Gly Gly Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln
        35                  40                  45
Arg Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
    50                  55                  60
Lys Ala Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Leu Cys Lys His Thr His Tyr Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Gly Phe Ser Gln Ile Pro Val Ser Ala Lys Asp Gln Ser Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Gly Tyr Arg Arg Met Pro Phe
        115                 120                 125
Asp Leu Cys Asn Ala Pro Ala Thr Phe Gln Ile Cys Met Met Ala Ile
    130                 135                 140
Phe Ser Asp Phe Cys Glu Lys Ile Cys Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Ser Ser Tyr Asp Asp Cys Leu Ser Asn Leu Asn Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser
        195                 200                 205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Ile Glu Lys
    210                 215                 220
Met Thr Cys Pro Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Arg Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
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<210> 86
<211> 762
<212> DNA
<213> Triticum aestivum

<400> 86

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gtgcggaaag aggtgctcaa gcttctggag gcaggtataa tttatcccgt tgctgagagt      60
cagtgggtaa gtcctgtcca ttgtgtccct aagaagggag gtattactgt tgtccctaat     120
gataaagatg aattgattcc tcaaagaatt attacaggtt ataggatggt aattgatttc     180
cgcaaattaa ataaagccac caagaaagat cattacccct tacctttttat tgatcaaatg     240
ctagaaagat tatgcaaaca tacacattat tgcttcctag atggttattc tggtttctct     300
caaatacctg tgtcggctaa agatcaatca aagactactt ttacatgccc ttttggtact     360
tttgcttata gacgtatgcc ttttggttta tgtaatgcac cttctacctt tcaaagatgc     420
atgatggcta tattctctga tttttgtgaa aagatttgtg aggttttcat ggacgaattt     480
tccgtctatg gttcctcttt tgatgattgc ttgagcaatc ctgatcgagt tttgcagaga     540
tgtgaagaaa ctaatcttgt cttgaattgg gaaaagtgcc actttatggt taatgaaggt     600
attgtcttgg ggcacaaagt ttctgaaaga ggtattgaag ttgataaagc caaggttgac     660
gctattgaaa agatgccatg tcccaaggac atcaaaggta taagaagttt ccttggtcac     720
gccggatttt ataggaggtt cataaaagac ttcacaaagg tt                        762
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<210> 87
<211> 254
<212> PRT
<213> Triticum aestivum

<400> 87
Val Arg Lys Glu Val Leu Lys Leu Leu Glu Ala Gly Ile Ile Tyr Pro
1 5 10 15
Val Ala Glu Ser Gln Trp Val Ser Pro Val His Cys Val Pro Lys Lys
20 25 30
Gly Gly Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln
35 40 45
Arg Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
50 55 60
Lys Ala Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Cys Lys His Thr His Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Phe Ser Gln Ile Pro Val Ser Ala Lys Asp Gln Ser Lys Thr
100 105 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ser Thr Phe Gln Arg Cys Met Met Ala Ile
130 135 140
Phe Ser Asp Phe Cys Glu Lys Ile Cys Glu Val Phe Met Asp Glu Phe
145 150 155 160
Ser Val Tyr Gly Ser Ser Phe Asp Asp Cys Leu Ser Asn Pro Asp Arg
165 170 175
Val Leu Gln Arg Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Ile Glu Lys
210 215 220
Met Pro Cys Pro Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 88
<211> 762
<212> DNA
<213> Triticum aestivum

<400> 88
gtgcgtaagg aggttttcaa gttccttgag gcaggtatta cttatcccgt tgctgatagt 60
gaatgggtaa gccctctcca ttgtgttcct aaaaagggag gtattaccgt tgttcttaat 120
gataaagatg aattgatccc gcaaataatt attacaggtt ataggatggt aattgatttc 180
cataagttaa ataaagctac taagaaagat cattaccctt tacctcttat tgatcaaatt 240
ctagaaagac tatccaaaca cacacatttc tgctttctag atggttatac tggtttctct 300
caaatacctg tgtcagtgaa ggatcaatct aaaactactt ttacttgccc ttttggtact 360
tttgcttata gacttatgcc ttttggttta tgtaatgcac ctacttcctt tcaaagatgc 420
atgatggcta tattctctgt tttttgtgaa aatatttgtg aggtattcat ggatgatttc 480
tccgtttatg gatcctcttt tgatgattgt ttgagcaacc ttgatcgagt tttgcagaga 540
tgcgaagaca ctagtctcat cctgaattgg gaaaagtgtc actttatggt taatgaaggc 600
attgtcttgg ggcataagat ttccgagaga ggtattgaag ttgacaaagc caaagttgat 660
gctattgaaa agattccatg tcccaaggac ataaaaggta taagaagttt ccttggtcat 720
gctggttttt ataggaggtt catcaaagac ttctcaaagg tt 762

<210> 89
<211> 254
<212> PRT

<213> Triticum aestivum

<400> 89

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Val Arg Lys Glu Val Phe Lys Phe Leu Glu Ala Gly Ile Thr Tyr Pro
 1               5                  10                  15
Val Ala Asp Ser Glu Trp Val Ser Pro Leu His Cys Val Pro Lys Lys
            20                  25                  30
Gly Gly Ile Thr Val Val Leu Asn Asp Lys Asp Glu Leu Ile Pro Gln
        35                  40                  45
Ile Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe His Lys Leu Asn
    50                  55                  60
Lys Ala Thr Lys Lys Asp His Tyr Pro Leu Pro Leu Ile Asp Gln Ile
65                  70                  75                  80
Leu Glu Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Thr Gly Phe Ser Gln Ile Pro Val Ser Val Lys Asp Gln Ser Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Leu Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Thr Ser Phe Gln Arg Cys Met Met Ala Ile
    130                 135                 140
Phe Ser Val Phe Cys Glu Asn Ile Cys Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Ser Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Asp Thr Ser Leu Ile Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195                 200                 205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Ile Glu Lys
    210                 215                 220
Ile Pro Cys Pro Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Ser Lys Val
                245                 250
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<210> 90
<211> 791
<212> DNA
<213> Gossypium hirsutum

<400> 90

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gtgcgcaagg aggttttaaa gctacttgat gacgggatga tctatcccat atctaacagt      60
aattgggtta gcccagtaca catagtacca aaaaagacca gtgcaaccgt aatcgagaat     120
tcggcaggtg agatagttcc cactcgggtc caaaacgggt ggagagtatg catcgattac     180
aggaagttga attccttaac tcggaaggat cactttccac ttccttttat tgaccagatg     240
ttagaacgtt tagctggaaa gtctcattat ttagaacgtt tagctggaaa gtctcattat     300
tgttgtttgg atggttacta aggtttttc cagatcccag tggcaccgga ggatcaagaa     360
agacaatgtt tacgtgccca tttggcacgt tttcttacag acggatgccg ttcggactct     420
gtaatgcacc agccagtttt cataggtgca tggtaagtat attttcagac tacgtcgata     480
aaattatcga ggtgttcatg gacgacttta ctgtatatgg tgagtccttc gaggtaagtc     540
tgacgaacct tgcaaaaatt ttggaaagat gcttagaatt taatcttgtt ctaaattatg     600
agaaatgcca ttttatggta gacaagggat tagttctagg tcatattatt tctgctgatg     660
gaatttctgt tgataaagca aaaatcaaca tcattaactc actaccatac cccacaactg     720
tgagggagat ttggtctttc cttggtcatg caggtttcta caagtggttc atcaaagact     780
tttcaaaagt t                                                         791
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<210> 91
<211> 264
<212> PRT
<213> Gossypium hirsutum

<400> 91
Val Arg Lys Glu Val Leu Lys Leu Leu Asp Asp Gly Met Ile Tyr Pro
 1   5   10   15
Ile Ser Asn Ser Asn Trp Val Ser Pro Val His Ile Val Pro Lys Lys
            20   25   30
Thr Ser Ala Thr Val Ile Glu Asn Ser Ala Gly Glu Ile Val Pro Thr
        35   40   45
Arg Val Gln Asn Gly Trp Arg Val Cys Ile Asp Tyr Arg Lys Leu Asn
    50   55   60
Ser Leu Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met
65   70   75   80
Leu Glu Arg Leu Ala Gly Lys Ser His Tyr Leu Glu Arg Leu Ala Gly
                85   90   95
Lys Ser His Tyr Cys Cys Leu Asp Gly Tyr Glx Gly Phe Phe Gln Ile
            100   105   110
Pro Val Ala Pro Glu Asp Gln Glu Lys Thr Met Phe Thr Cys Pro Phe
        115   120   125
Gly Thr Phe Ser Tyr Arg Arg Met Pro Phe Gly Leu Cys Asn Ala Pro
    130   135   140
Ala Ser Phe His Arg Cys Met Val Ser Ile Phe Ser Asp Tyr Val Asp
145   150   155   160
Lys Ile Ile Glu Val Phe Met Asp Asp Phe Thr Val Tyr Gly Glu Ser
                165   170   175
Phe Glu Val Ser Leu Thr Asn Leu Ala Lys Ile Leu Glu Arg Cys Leu
            180   185   190
Glu Phe Asn Leu Val Leu Asn Tyr Glu Lys Cys His Phe Met Val Asp
        195   200   205
Lys Gly Leu Val Leu Gly His Ile Ile Ser Ala Asp Gly Ile Ser Val
    210   215   220
Asp Lys Ala Lys Ile Asn Ile Ile Asn Ser Leu Pro Tyr Pro Thr Thr
225   230   235   240
Val Arg Glu Ile Trp Ser Phe Leu Gly His Ala Gly Phe Tyr Lys Trp
                245   250   255
Phe Ile Lys Asp Phe Ser Lys Val
            260

<210> 92
<211> 763
<212> DNA
<213> Gossypium hirsutum

<400> 92
gtgcgtaaag aggtcgtaaa gctacttgat tccgggatga tctatcccat atctgacaat 60
aattgggtta gtccagtcca catagtaccc aaaaagaccg gtgtaaccgt aattgagaat 120
tcagcaggtg agatggttcc cacttaagtc cgaaacggtc ggagagtatg catcgattac 180
aggaagttga attccttaac tcggaaagat cactttccac ttctttttat tgatcagatg 240
ttagaacatt tagccagaaa gtctcattat tgttgtctgg atggttactc aggttttttc 300
cagatcccaa tggcactaaa ggatcaagaa aagatgacat ttacgtgccc atttggcatg 360
ttcgcttata gaaggatgtc gtttcagact ttgcaatgca ccaaccatgt ttcagaggtg 420
catgataagt atatttttg actatgttaa gaaaataatt gaggtgttca tggacgaatt 480
tactgtatat agtgagtcct tcgaggtata tttgtcaaat ctagaaaaat ttttggaaag 540
atgcttagaa tttaatcttg ttctaaatta tgagaattgc tatttaatgg tagacaaggg 600

attagttcta ggtcatatca tttctgctaa gggaatttct gtcgataaag taaaaattaa 660
catcataagc tcaataccat accccacaac tgtgagggag attcgttctt tccttagtca 720
tataggtttc tataggcgat tcatcaagga cttttcaaaa gtt 763

<210> 93
<211> 254
<212> PRT
<213> Gossypium hirsutum

<400> 93
Val Arg Lys Glu Val Val Lys Leu Leu Asp Ser Gly Met Ile Tyr Pro
1 5 10 15
Ile Ser Asp Asn Asn Trp Val Ser Pro Val His Ile Val Pro Lys Lys
20 25 30
Thr Gly Val Thr Val Ile Glu Asn Ser Ala Gly Glu Met Val Pro Thr
35 40 45
Glx Val Arg Asn Gly Arg Arg Val Cys Ile Asp Tyr Arg Lys Leu Asn
50 55 60
Ser Leu Thr Arg Lys Asp His Phe Pro Leu Leu Phe Ile Asp Gln Met
65 70 75 80
Leu Glu His Leu Ala Arg Lys Ser His Tyr Cys Cys Leu Asp Gly Tyr
85 90 95
Ser Gly Phe Phe Gln Ile Pro Met Ala Leu Lys Asp Gln Glu Lys Met
100 105 110
Thr Phe Thr Cys Pro Phe Gly Met Phe Ala Tyr Arg Arg Met Ser Phe
115 120 125
Arg Leu Cys Asn Ala Pro Thr Met Phe Gln Arg Cys Met Ile Ser Ile
130 135 140
Phe Phe Asp Tyr Val Lys Lys Ile Ile Glu Val Phe Met Asp Glu Phe
145 150 155 160
Thr Val Tyr Ser Glu Ser Phe Glu Val Tyr Leu Ser Asn Leu Glu Lys
165 170 175
Phe Leu Glu Arg Cys Leu Glu Phe Asn Leu Val Leu Asn Tyr Glu Asn
180 185 190
Cys Tyr Leu Met Val Asp Lys Gly Leu Val Leu Gly His Ile Ile Ser
195 200 205
Ala Lys Gly Ile Ser Val Asp Lys Val Lys Ile Asn Ile Ile Ser Ser
210 215 220
Ile Pro Tyr Pro Thr Thr Val Arg Glu Ile Arg Ser Phe Leu Ser His
225 230 235 240
Ile Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Ser Lys Val
245 250

<210> 94
<211> 723
<212> DNA
<213> Gossypium hirsutum

<400> 94
gtgcgtaagg aggttttgaa attgttggat gctggaatga tatactcgat ctttgacagt 60
gattgggtta gctgggttca tgtcgtgcca aagaaaactg gcgtgacagt ggtgaaaaac 120
tcatcaggag agctagtccc tacccgagtc cagaatcgat ggagggtttg catcgattac 180
aggaagttga acgcagctac ccgaaatgac cattttccac ttcccttcat tgatcaaatg 240
ctcgagcgat tagctaataa gacccattat tgttgtctcg atgggtactc aggacttttc 300
caaattccgg tggcacctga ggatcaagac aaaacaactt tcacgtgccc ctttggaacg 360
tttgcgtata gaagaatgtc gtttggactc tgtaatgctc cggccacttt ccagagatgt 420
atggtgagca tattctctga ttatgtcgag aaaatcattg aattcttcat ggatgacttc 480

acggtgtacg gtaactcttt taacgaatgt ctcgataatc ttgctaagat attacagaga 540
tgcctagaat ttaatcttgt tttaaattat gaaaaatgcc acttcatggt tgacaaagga 600
ttaatttttgg gtcatatagt ttcttcagaa ggtattgagg tcaataaagc aaaaacgaat 660
attattgact cattacctta ccccagattt tacagacgat tcataaagga cttcacaaaa 720
gtt 723

<210> 95
<211> 241
<212> PRT
<213> Gossypium hirsutum

<400> 95
Val Arg Lys Glu Val Leu Lys Leu Leu Asp Ala Gly Met Ile Tyr Ser
1 5 10 15
Ile Phe Asp Ser Asp Trp Val Ser Trp Val His Val Val Pro Lys Lys
20 25 30
Thr Gly Val Thr Val Val Lys Asn Ser Ser Gly Glu Leu Val Pro Thr
35 40 45
Arg Val Gln Asn Arg Trp Arg Val Cys Ile Asp Tyr Arg Lys Leu Asn
50 55 60
Ala Ala Thr Arg Asn Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ala Asn Lys Thr His Tyr Cys Cys Leu Asp Gly Tyr
85 90 95
Ser Gly Leu Phe Gln Ile Pro Val Ala Pro Glu Asp Gln Asp Lys Thr
100 105 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Ser Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Val Ser Ile
130 135 140
Phe Ser Asp Tyr Val Glu Lys Ile Ile Glu Phe Phe Met Asp Asp Phe
145 150 155 160
Thr Val Tyr Gly Asn Ser Phe Asn Glu Cys Leu Asp Asn Leu Ala Lys
165 170 175
Ile Leu Gln Arg Cys Leu Glu Phe Asn Leu Val Leu Asn Tyr Glu Lys
180 185 190
Cys His Phe Met Val Asp Lys Gly Leu Ile Leu Gly His Ile Val Ser
195 200 205
Ser Glu Gly Ile Glu Val Asn Lys Ala Lys Thr Asn Ile Ile Asp Ser
210 215 220
Leu Pro Tyr Pro Arg Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys
225 230 235 240
Val

<210> 96
<211> 762
<212> DNA
<213> Lycopersicon esculentum

<400> 96
gtgcggaaag aggttgtgaa gctgttagat acgggtattg tctagccaat ttcggacaac 60
aagtaggtta gtccagtaca atgtgaacct aaaaagggag acataacggt gatcactaat 120
gaaaaaaatg agttgatccc aaccatgata gtcacataat ggagaatatg catggattac 180
aggaaattga atgaagccac caggaaggac cattacccgg tccctttttat tgatcagatg 240
ttggaccggt tggctgggga ataatattat tgttttctta atggctattt acggtacaac 300
caaattgtga tttcaccaaa ggattaagag aaaaccactt tcacttgccc gtatggtaca 360

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tatgctttca aaaagatacc ttttgggtta tgaaatgcct cggctacttt ccaatgatgc     420
atgatggcta tttttcatga tatggttgaa gattttgttg agatattcat gaatgatttc     480
tcagtgtttg gggattcttt tgatatgtgc ttggagaatt tggacagtgt gttggctagt     540
tgtgaagaaa ctaatctttt cctaaactgg gaataatagc aatttctagt aaaggaaggg     600
attatgctag gacataaggt gtcaaagaga ggtatggaag ttgatagtgc caaagtggag     660
gttattgaaa agcttccccc tcctatatct gttaaaggga tgcaaagttt tctgggtcat     720
gttgggttct ataggagatt cataaaagac ttcacaaagg tt                        762

<210> 97
<211> 254
<212> PRT
<213> Lycopersicon esculentum

<400> 97
Val Arg Lys Glu Val Val Lys Leu Leu Asp Thr Gly Ile Val Glx Pro
 1               5                  10                  15
Ile Ser Asp Asn Lys Glx Val Ser Pro Val Gln Cys Glu Pro Lys Lys
            20                  25                  30
Gly Asp Ile Thr Val Ile Thr Asn Glu Lys Asn Glu Leu Ile Pro Thr
        35                  40                  45
Met Ile Val Thr Glx Trp Arg Ile Cys Met Asp Tyr Arg Lys Leu Asn
    50                  55                  60
Glu Ala Thr Arg Lys Asp His Tyr Pro Val Pro Phe Ile Asp Gln Met
65                  70                  75                  80
Leu Asp Arg Leu Ala Gly Glu Glx Tyr Tyr Cys Phe Leu Asn Gly Tyr
                85                  90                  95
Leu Arg Tyr Asn Gln Ile Val Ile Ser Pro Lys Asp Glx Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Phe Lys Lys Ile Pro Phe
        115                 120                 125
Gly Leu Glx Asn Ala Ser Ala Thr Phe Gln Glx Cys Met Met Ala Ile
    130                 135                 140
Phe His Asp Met Val Glu Asp Phe Val Glu Ile Phe Met Asn Asp Phe
145                 150                 155                 160
Ser Val Phe Gly Asp Ser Phe Asp Met Cys Leu Glu Asn Leu Asp Ser
                165                 170                 175
Val Leu Ala Ser Cys Glu Glu Thr Asn Leu Phe Leu Asn Trp Glu Glx
            180                 185                 190
Glx Gln Phe Leu Val Lys Glu Gly Ile Met Leu Gly His Lys Val Ser
        195                 200                 205
Lys Arg Gly Met Glu Val Asp Ser Ala Lys Val Glu Val Ile Glu Lys
    210                 215                 220
Leu Pro Pro Pro Ile Ser Val Lys Gly Met Gln Ser Phe Leu Gly His
225                 230                 235                 240
Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250

<210> 98
<211> 689
<212> DNA
<213> Lycopersicon esculentum

<400> 98
cgaaaggagg tggtgaaact ggaaattatc aagtagttgg atgctagagt aatctatcca      60
atcgccgata gtagttgggt atgcctagtt cagtgtgtac caaagaaagg gggaatgact     120
gtggtcccca acgaaaagaa tgaacttgtt cgaatgagac cggttactgg atggagggtg     180
tgcatggatt accgtaaact gaactcatag actgaaaaag actattttca tatgcccttc     240
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atggatcaga tgttggatag acttgccgga aaagggtggt attgttttct tgatgggtat 300
tcggggtata atcagatttc tattgcacca gaagatcaag agaaaaccac tttcacttgt 360
ccatacggga cttttgcatt cagaagaatg tcgtttgggt tgtgcaatgc acccgcaacc 420
tttcagagat ggatgatgtc aatattttct gacatgatgg aggatactat agaggttttt 480
atggatgatt tttctgtggt tggtgattca ttcgagcggt gcttgtccaa tttatctgag 540
gttcttaaga gatgtgaaga ctgcaatttg gtactaaact gggaaaagtg tcatttcatg 600
gtgaaagagg gtattgtgtt gggtcatcgc atttcagaaa agggcatgca tgtttttact 660
ggtgattcat caaagacttc acaaaggtt 689

<210> 99
<211> 229
<212> PRT
<213> Lycopersicon esculentum

<400> 99
Arg Lys Glu Val Val Lys Leu Glu Ile Ile Lys Glx Leu Asp Ala Arg
1 5 10 15
Val Ile Tyr Pro Ile Ala Asp Ser Ser Trp Val Cys Leu Val Gln Cys
20 25 30
Val Pro Lys Lys Gly Gly Met Thr Val Val Pro Asn Glu Lys Asn Glu
35 40 45
Leu Val Arg Met Arg Pro Val Thr Gly Trp Arg Val Cys Met Asp Tyr
50 55 60
Arg Lys Leu Asn Ser Glx Thr Glu Lys Asp Tyr Phe His Met Pro Phe
65 70 75 80
Met Asp Gln Met Leu Asp Arg Leu Ala Gly Lys Gly Trp Tyr Cys Phe
85 90 95
Leu Asp Gly Tyr Ser Gly Tyr Asn Gln Ile Ser Ile Ala Pro Glu Asp
100 105 110
Gln Glu Lys Thr Thr Phe Thr Cys Pro Tyr Gly Thr Phe Ala Phe Arg
115 120 125
Arg Met Ser Phe Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Trp
130 135 140
Met Met Ser Ile Phe Ser Asp Met Met Glu Asp Thr Ile Glu Val Phe
145 150 155 160
Met Asp Asp Phe Ser Val Val Gly Asp Ser Phe Glu Arg Cys Leu Ser
165 170 175
Asn Leu Ser Glu Val Leu Lys Arg Cys Glu Asp Cys Asn Leu Val Leu
180 185 190
Asn Trp Glu Lys Cys His Phe Met Val Lys Glu Gly Ile Val Leu Gly
195 200 205
His Arg Ile Ser Glu Lys Gly Met His Val Phe Thr Gly Asp Ser Ser
210 215 220
Lys Thr Ser Gln Arg
225

<210> 100
<211> 760
<212> DNA
<213> Lycopersicon esculentum

<400> 100
gtgcgtaagg aggtgtttaa gcttctagat gcgggtattg tctacccaat taggacaaca 60
agtgggttag tctagtacaa tgtgtaccta aaaagggagg catggcaatg attactaatg 120
aaaacaatga gtttatccca accagcacag tcacaagatg gcgaatatgc atgaattaca 180
cgaagttaat gaagccacta ggaagaatca ttacccaatt ctttttattg attatatgtt 240
ggaccggtta gctgggcaag aatattattg ttttttggat tactaatcag ggtacaacta 300

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aattttgatt gcaccagagg atcaagagaa aacaactttc acttgcccgt atggtacata     360
tgctttcaag aggatacctt ttgggttatg caatgctctg tctaatttcc aaagatgcat     420
gatgactatt tttcatgata tggttgaata ttttgaggat atattcatgg atgatttctt     480
agtgttttgg gagtcttttg atagatgctt ggagaatttg aacaggttgt tagctaggtg     540
cgaacaaact aatcttgtcc tgaactggga aaaatgtcat tttttagtaa aggaagggaa     600
tttttcgggg cataaggtgt aaaagatagg gctggaagtt gatcatgaca aagtggaagt     660
aattgaaaag atctcctctc ccatttttgt gaaacgggtg agaagtttac taggtcatgc     720
tgagttttac aggatattca tcaaggactt ctcaaaggtt                           760

<210> 101
<211> 254
<212> PRT
<213> Lycopersicon esculentum

<400> 101
Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Ile Val Tyr Pro
 1               5                  10                  15
Ile Ser Asp Asn Lys Trp Val Ser Leu Val Gln Cys Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Ala Met Ile Thr Asn Glu Asn Asn Glu Phe Ile Pro Thr
        35                  40                  45
Ser Thr Val Thr Arg Trp Arg Ile Cys Met Asn Tyr Thr Lys Leu Asn
    50                  55                  60
Glu Ala Thr Arg Lys Asn His Tyr Pro Ile Leu Phe Ile Asp Tyr Met
65                  70                  75                  80
Leu Asp Arg Leu Ala Gly Gln Glu Tyr Tyr Cys Phe Leu Asp Tyr Glx
                85                  90                  95
Ser Gly Tyr Asn Glx Ile Leu Ile Ala Pro Glu Asp Gln Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Phe Lys Arg Ile Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Leu Ser Asn Phe Gln Arg Cys Met Met Thr Ile
    130                 135                 140
Phe His Asp Met Val Glu Tyr Phe Glu Asp Ile Phe Met Asp Asp Phe
145                 150                 155                 160
Leu Val Phe Trp Glu Ser Phe Asp Arg Cys Leu Glu Asn Leu Asn Arg
                165                 170                 175
Leu Leu Ala Arg Cys Glu Gln Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Leu Val Lys Glu Gly Asn Phe Ser Gly His Lys Val Glx
        195                 200                 205
Lys Ile Gly Leu Glu Val Asp His Asp Lys Val Glu Val Ile Glu Lys
    210                 215                 220
Ile Ser Ser Pro Ile Phe Val Lys Arg Val Arg Ser Leu Leu Gly His
225                 230                 235                 240
Ala Glu Phe Tyr Arg Ile Phe Ile Lys Asp Phe Ser Lys Val
                245                 250

<210> 102
<211> 776
<212> DNA
<213> Lycopersicon esculentum

<400> 102
gtgcggaaag aagtgtttaa actggaatca ttaaatggtt ggatgctgga gtaatatatc      60
cgatctccga tagtagttgg gtatgcccta ttcagtgtgt acctaagaaa gggggaatga     120
ctgtggtccc caataagaaa aatgaacttg ttctaatgag accggttact ggagggtggg     180
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tgtgtatgga ttaccgtaaa ttaaatgcat ggactgaaaa agaccatttt cctatgccct     240
tcatggatca gatgttggat agacttgccg aaaaagggtg gtactgtttt cttgatggat     300
agtcagggta taattagatt tctattgcac cagaagatca agagaaaacc acatttactt     360
gtccatatgg gacctttgca ttgaagagaa tgtcgtttgg gttgtgcaat gcacccgcca     420
catttcacag atgtaaaaat gttgatattc ttcgacatgg tggatgatac tattgatgct     480
tttatggatg atttttctct tgttggtgaa tcattcgaga ggtgtttgaa ccatttatct     540
gatgtcctta agagatgtga agactgcaat ttagtactaa attgggaaaa atgccacttc     600
atggtgaaaa aaggtattgt tttgggtcat cgcattccag aaaagggcat agaggttgat     660
cgagctaaag tagaggtaat agagagactt cccccactat ctctgtaaaa ggtgtgagaa     720
gctttcttgg gcatgcaagt ttttaccgga gattcatcaa agacttcaca aaagtt          776

<210> 103
<211> 258
<212> PRT
<213> Lycopersicon esculentum

<400> 103
Ala Glu Arg Ser Val Glx Thr Gly Ile Ile Lys Trp Leu Asp Ala Gly
 1               5                  10                  15
Val Ile Tyr Pro Ile Ser Asp Ser Ser Trp Val Cys Pro Ile Gln Cys
            20                  25                  30
Val Pro Lys Lys Gly Gly Met Thr Val Val Pro Asn Lys Lys Asn Glu
        35                  40                  45
Leu Val Leu Met Arg Pro Val Thr Gly Gly Trp Val Cys Met Asp Tyr
    50                  55                  60
Arg Lys Leu Asn Ala Trp Thr Glu Lys Asp His Phe Pro Met Pro Phe
65                  70                  75                  80
Met Asp Gln Met Leu Asp Arg Leu Ala Glu Lys Gly Trp Tyr Cys Phe
                85                  90                  95
Leu Asp Gly Glx Ser Gly Tyr Asn Glx Ile Ser Ile Ala Pro Glu Asp
            100                 105                 110
Gln Glu Lys Thr Thr Phe Thr Cys Pro Tyr Gly Thr Phe Ala Leu Lys
        115                 120                 125
Arg Met Ser Phe Gly Leu Cys Asn Ala Pro Ala Thr Phe His Arg Cys
    130                 135                 140
Lys Met Leu Ile Phe Phe Asp Met Val Asp Asp Thr Ile Asp Ala Phe
145                 150                 155                 160
Met Asp Asp Phe Ser Leu Val Gly Glu Ser Phe Glu Arg Cys Leu Asn
                165                 170                 175
His Leu Ser Asp Val Leu Lys Arg Cys Glu Asp Cys Asn Leu Val Leu
            180                 185                 190
Asn Trp Glu Lys Cys His Phe Met Val Lys Lys Gly Ile Val Leu Gly
        195                 200                 205
His Arg Ile Pro Glu Lys Gly Ile Glu Val Asp Arg Ala Lys Val Glu
    210                 215                 220
Val Ile Glu Arg Leu Pro Pro Pro Ile Ser Val Lys Gly Val Arg Ser
225                 230                 235                 240
Phe Leu Gly His Ala Ser Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr
                245                 250                 255
Lys Val


<210> 104
<211> 761
<212> DNA
<213> Solanum tuberosum
```

<400> 104
gtgcggaagg aggtacttaa attgttggat gcacggattg tgtacccaat atcagacagt 60
aaatgggtaa gtccagtaaa gtgtgtgccc aagaagggca gaatgacggt gttgactaat 120
gagaagaatg aggtaatccc cacaagaaca gtgactgggt gacggatttg catggactac 180
atgaagttga acgacgccac cagaaaggac cattatccgg tacctttcat tgataaaata 240
ttggataggt tggcaggaca tgagtactat tgttttcttg gtgtctactc agggtacaat 300
cagattgtta ttgcaataga ggactaggtg aaaaccacct tcacctgttc gtatggcaca 360
tatgcgttca agcacatgcc attcggcttg tgcaatgccc tggccacatt tcagagatgc 420
atgttggcaa tcttccatga tatggtggag gattttgttg aagttttcat ggatgacttc 480
ttggtgtttg gtgagtcttt tgaactttgt ttgactaatt ttgacagatt tcttgctagg 540
tgtgaagaga cgaatctggt gataaactga tagaagtgtc actttctggt tcgagaggga 600
attgtgttgg gacacaagat ctccaaaaat gggctgaaag.ttgacaaagc caacgtagag 660
gttattgaga aattgccacc cccatcacag tgaaggtaat taaaagctta ctaggacatg 720
cttggtttta tacgaggttc atcaaagact tcacaaaggt t 761

<210> 105
<211> 254
<212> PRT
<213> Solanum tuberosum

<400> 105
Val Arg Lys Glu Val Leu Lys Leu Leu Asp Ala Arg Ile Val Tyr Pro
 1   5   10   15
Ile Ser Asp Ser Lys Trp Val Ser Pro Val Lys Cys Val Pro Lys Lys
            20   25   30
Gly Arg Met Thr Val Leu Thr Asn Glu Lys Asn Glu Val Ile Pro Thr
        35   40   45
Arg Thr Val Thr Gly Glx Arg Ile Cys Met Asp Tyr Met Lys Leu Asn
    50   55   60
Asp Ala Thr Arg Lys Asp His Tyr Pro Val Pro Phe Ile Asp Lys Ile
65   70   75   80
Leu Asp Arg Leu Ala Gly His Glu Tyr Tyr Cys Phe Leu Gly Val Tyr
                85   90   95
Ser Gly Tyr Asn Gln Ile Val Ile Ala Ile Glu Asp Glx Val Lys Thr
            100   105   110
Thr Phe Thr Cys Ser Tyr Gly Thr Tyr Ala Phe Lys His Met Pro Phe
        115   120   125
Gly Leu Cys Asn Ala Leu Ala Thr Phe Gln Arg Cys Met Leu Ala Ile
    130   135   140
Phe His Asp Met Val Glu Asp Phe Val Glu Val Phe Met Asp Asp Phe
145   150   155   160
Leu Val Phe Gly Glu Ser Phe Glu Leu Cys Leu Thr Asn Phe Asp Arg
                165   170   175
Phe Leu Ala Arg Cys Glu Glu Thr Asn Leu Val Ile Asn Glx Glx Lys
            180   185   190
Cys His Phe Leu Val Arg Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195   200   205
Lys Asn Gly Leu Lys Val Asp Lys Ala Asn Val Glu Val Ile Glu Lys
    210   215   220
Leu Pro Pro Pro Ile Thr Val Lys Val Ile Lys Ser Leu Leu Gly His
225   230   235   240
Ala Trp Phe Tyr Thr Arg Phe Ile Lys Asp Phe Thr Lys Val
                245   250

<210> 106
<211> 760
<212> DNA

<213> Solanum tuberosum

<400> 106
gtgcgtaaag aggttttcaa actgctagat gtcggtattg tatatccgat ttcagaaagc 60
aaatgggtca gcccagttta gtgtgtgcct aaaaaaagag gcatgccggt gatcaccaat 120
gaaaaaaatg agttgattcc aaccaggaca gtgacagggt ggcgaatatg catggattat 180
aggaaattga atgaggccac cagaaaggat cactgcccgg ttccttttat tgatcagatg 240
ctggacaggt tagttgggca agaatattat tgtttcctgg aaggctattc aggatacaac 300
caaattgtga ttgcaccaga ggaccaggag aaaactacat tcacttgtct gtatgggaca 360
tatgctttca agtgactgcc gtttgggcta tgcaatgctc cagccacctt ccaaagatga 420
atgatggcta tctttcatga tatggttgaa gattttgtgg agatattcat ggatgacttc 480
tcagtcttta gggagtcttt tgataggtgt ttggagaatt gggacagggt gctggctaga 540
tgcgaggaaa ctaatctcat cctaaactgg aaaaaatgtc atttcctagt aaatgaaggg 600
attgtattgg gccataaggt gtcaaagaga gggctggaag ttgatcgtgc caaagtggaa 660
gttattgaaa aactacctcc tccaatctgt taaaggggtg agaagctttc tgggtcatgc 720
tggtttttac aggagattta taaaggactt cacaaaggtt 760

<210> 107
<211> 254
<212> PRT
<213> Solanum tuberosum

<400> 107
Val Arg Lys Glu Val Phe Lys Leu Leu Asp Val Gly Ile Val Tyr Pro
1 5 10 15
Ile Ser Glu Ser Lys Trp Val Ser Pro Val Glx Cys Val Pro Lys Lys
20 25 30
Arg Gly Met Pro Val Ile Thr Asn Glu Lys Asn Glu Leu Ile Pro Thr
35 40 45
Arg Thr Val Thr Gly Trp Arg Ile Cys Met Asp Tyr Arg Lys Leu Asn
50 55 60
Glu Ala Thr Arg Lys Asp His Cys Pro Val Pro Phe Ile Asp Gln Met
65 70 75 80
Leu Asp Arg Leu Val Gly Gln Glu Tyr Tyr Cys Phe Leu Glu Gly Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Val Ile Ala Pro Glu Asp Gln Glu Lys Thr
100 105 110
Thr Phe Thr Cys Leu Tyr Gly Thr Tyr Ala Phe Lys Glx Leu Pro Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Glx Met Met Ala Ile
130 135 140
Phe His Asp Met Val Glu Asp Phe Val Glu Ile Phe Met Asp Asp Phe
145 150 155 160
Ser Val Phe Arg Glu Ser Phe Asp Arg Cys Leu Glu Asn Trp Asp Arg
165 170 175
Val Leu Ala Arg Cys Glu Glu Thr Asn Leu Ile Leu Asn Trp Lys Lys
180 185 190
Cys His Phe Leu Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205
Lys Arg Gly Leu Glu Val Asp Arg Ala Lys Val Glu Val Ile Glu Lys
210 215 220
Leu Pro Pro Pro Ile Ser Val Lys Gly Val Arg Ser Phe Leu Gly His
225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 108

<211> 761
<212> DNA
<213> Solanum tuberosum

<400> 108
gtgcgtaaag aggttttcaa gctctggatg caggtattgt ctatccaatt tcagacagca 60
agtgggtcag tccagttcag tgtgtgccta aaaagggagg catgacggtg atcactaatg 120
aaaaaaatga gttgattcca accaggacag tgacaggatg gcgaatatgc atggattaca 180
gaaaattaaa tgaagctacc agaaaggatc actacccggt tccttttatt gatcagatgc 240
tggacaggtt ggctggacaa gaatattatt gtttcttgga tggttattca ggatacaacc 300
aaatagtgat tgcaccagag gaccagggga aaactacatt cacttgcttg tatgggacat 360
atgtttccaa gagaatgtcg tttgggctat gcaatgctcc atccattttc caaagatgca 420
tgatggccat cttccatgat aaggttgaag attttatgga aatattcatg gatgacttct 480
cagtatttgg ggagtctttt gacaggtgct tggagaattt agacagagtg ttggctagat 540
gcgaggaaac taattttgtc ctaaactggg aaaaatgtca tttcctagtg aaggaaggga 600
ttgtgttggg tcataaggtg tcaaagagag ggctggaagt tgatcgtgcc agagtggaaa 660
taatcaaaaa gctacctccc ccaatttctg ttaaaggggt gcgaagtttt ttgggtcatg 720
ttagtttcta cgaaagattc ataaaggact tcaccaaggt t 761

<210> 109
<211> 254
<212> PRT
<213> Solanum tuberosum

<400> 109
Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Ile Val Tyr Pro
1 5 10 15
Ile Ser Asp Ser Lys Trp Val Ser Pro Val Gln Cys Val Pro Lys Lys
20 25 30
Gly Gly Met Thr Val Ile Thr Asn Glu Lys Asn Glu Leu Ile Pro Thr
35 40 45
Arg Thr Val Thr Gly Trp Arg Ile Cys Met Asp Tyr Arg Lys Leu Asn
50 55 60
Glu Ala Thr Arg Lys Asp His Tyr Pro Val Pro Phe Ile Asp Gln Met
65 70 75 80
Leu Asp Arg Leu Ala Gly Gln Glu Tyr Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Val Ile Ala Pro Glu Asp Gln Gly Lys Thr
100 105 110
Thr Phe Thr Cys Leu Tyr Gly Thr Tyr Val Ser Lys Arg Met Ser Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ser Ile Phe Gln Arg Cys Met Met Ala Ile
130 135 140
Phe His Asp Lys Val Glu Asp Phe Met Glu Ile Phe Met Asp Asp Phe
145 150 155 160
Ser Val Phe Gly Glu Ser Phe Asp Arg Cys Leu Glu Asn Leu Asp Arg
165 170 175
Val Leu Ala Arg Cys Glu Glu Thr Asn Phe Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Leu Val Lys Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205
Lys Arg Gly Leu Glu Val Asp Arg Ala Arg Val Glu Ile Ile Lys Lys
210 215 220
Leu Pro Pro Pro Ile Ser Val Lys Gly Val Arg Ser Phe Leu Gly His
225 230 235 240
Val Ser Phe Tyr Glu Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 110
<211> 762
<212> DNA
<213> Solanum tuberosum

<400> 110
gtgcgtaagg aggtcctcaa gctgtctgat gcaggaattg tgtaccccat ttatgatata 60
aagtggatca gcccagttca ctgtgtgccg aaaaagggag gcatgacgat tattactaat 120
gaaaagaagg agttgatttc agctagaacg gtgatagagt ggcacatatg aatggactat 180
aggagactaa atgaggcaac tagaaaggaa cactacccag ttcctttcat tgatcaaatg 240
ttggacaggt ttattgggca agagtattat tgtttcctag atggctattc aggatataat 300
caaattgtga ttgcgccata agataaagag aaaactacat ttacttctct atatgggaca 360
tatgccttca agagaatgtc gtttgggccg tgcaatgctc caaccacatt ccaaagatgc 420
atgacagcca tttttcatga tatggtcaaa tattttgtgg agatattcat ggatgaattc 480
ttagtctttg gggagtcttt tgacacgtgt ctagaatatt tggacaatgt gcttgccaga 540
tgtgaggaaa ctaatcccgt cctcaactgg gaaaaatgtc attttctagt gaagaagggg 600
attgtactag gccacaaggt ttcagaggaa ggactggaag ttgatcgtgg aaaagtagag 660
gtaatttaaa agctaccccc tcaagtcttc gttaaagggg tgagaaggtt ccttggtcat 720
tctaggttcg aaatgagatt cataaaagac ttcacaaaag tt 762

<210> 111
<211> 254
<212> PRT
<213> Solanum tuberosum

<400> 111
Val Arg Lys Glu Val Leu Lys Leu Ser Asp Ala Gly Ile Val Tyr Pro
1 5 10 15
Ile Tyr Asp Ile Lys Trp Ile Ser Pro Val His Cys Val Pro Lys Lys
20 25 30
Gly Gly Met Thr Ile Ile Thr Asn Glu Lys Lys Glu Leu Ile Ser Ala
35 40 45
Arg Thr Val Ile Glu Trp His Ile Glx Met Asp Tyr Arg Arg Leu Asn
50 55 60
Glu Ala Thr Arg Lys Glu His Tyr Pro Val Pro Phe Ile Asp Gln Met
65 70 75 80
Leu Asp Arg Phe Ile Gly Gln Glu Tyr Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Val Ile Ala Pro Glx Asp Lys Glu Lys Thr
100 105 110
Thr Phe Thr Ser Leu Tyr Gly Thr Tyr Ala Phe Lys Arg Met Ser Phe
115 120 125
Gly Pro Cys Asn Ala Pro Thr Thr Phe Gln Arg Cys Met Thr Ala Ile
130 135 140
Phe His Asp Met Val Lys Tyr Phe Val Glu Ile Phe Met Asp Glu Phe
145 150 155 160
Leu Val Phe Gly Glu Ser Phe Asp Thr Cys Leu Glu Tyr Leu Asp Asn
165 170 175
Val Leu Ala Arg Cys Glu Glu Thr Asn Pro Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Leu Val Lys Lys Gly Ile Val Leu Gly His Lys Val Ser
195 200 205
Glu Glu Gly Leu Glu Val Asp Arg Gly Lys Val Glu Val Ile Glx Lys
210 215 220
Leu Pro Pro Gln Val Phe Val Lys Gly Val Arg Arg Phe Leu Gly His
225 230 235 240

```
Ser Arg Phe Glu Met Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250

<210> 112
<211> 762
<212> DNA
<213> Solanum tuberosum

<400> 112
gtgcggaagg aggtttttaa gctgctggat gcgggtattg tataccagat ttcagatagc      60
aaaggggtct acccgattta gtttgtgcct aaaaaatgca gcatgacagt gatcaccaat     120
gaaaagaatg agctgattcc aaccaggaca gtgacagggt ggcgaatatg catggattat     180
atgaagttga atgaggccac cagaaaggat cactacccga ttcattttat tgatcagatg     240
ttggacaagt tagctgagta aaaatattat tgtttcttgg cttgttattc aagatacaac     300
caatttctca ttgcaccaca ggaccaggag gaaactacat tcacttgtcc ttatgggaca     360
tatgctttca agcgaatgtc gtttgggcta tgcaatgctc caaccacctt ccaaagatgc     420
ataagggcta tctttcatga tatggttgaa gattttgtgg agatattcat ggatgacttc     480
tcagtctttg ggtagtcttt tgagaggtgt ctggaaaatt ttgacagggt gctggctgta     540
tgcgaggaaa ctaatttttt cctaaactgg gaaaaatgtc attttctagt gaaggaaggg     600
attgtattgg gacataaggt gtcaaagtga aggcttgaag ttgatcgtgc caaagtggaa     660
gtcgttgaaa acctaccttc cccattctct gttaaagggg tgagaagttt tttgggtcat     720
gctggtttct ataggagatt tatcaaagac ttcactaagg tt                        762

<210> 113
<211> 254
<212> PRT
<213> Solanum tuberosum

<400> 113
Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Ile Val Tyr Gln
 1               5                  10                  15
Ile Ser Asp Ser Lys Gly Val Tyr Pro Ile Glx Phe Val Pro Lys Lys
            20                  25                  30
Cys Ser Met Thr Val Ile Thr Asn Glu Lys Asn Glu Leu Ile Pro Thr
        35                  40                  45
Arg Thr Val Thr Gly Trp Arg Ile Cys Met Asp Tyr Met Lys Leu Asn
    50                  55                  60
Glu Ala Thr Arg Lys Asp His Tyr Pro Ile His Phe Ile Asp Gln Met
65                  70                  75                  80
Leu Asp Lys Leu Ala Glu Glx Lys Tyr Tyr Cys Phe Leu Ala Cys Tyr
                85                  90                  95
Ser Arg Tyr Asn Gln Phe Leu Ile Ala Pro Gln Asp Gln Glu Glu Thr
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Phe Lys Arg Met Ser Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Thr Thr Phe Gln Arg Cys Ile Arg Ala Ile
    130                 135                 140
Phe His Asp Met Val Glu Asp Phe Val Glu Ile Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Phe Gly Glx Ser Phe Glu Arg Cys Leu Glu Asn Phe Asp Arg
                165                 170                 175
Val Leu Ala Val Cys Glu Glu Thr Asn Phe Phe Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Leu Val Lys Glu Gly Ile Val Leu Gly His Lys Val Ser
        195                 200                 205
Lys Glx Arg Leu Glu Val Asp Arg Ala Lys Val Glu Val Val Glu Asn
    210                 215                 220
```

```
Leu Pro Ser Pro Phe Ser Val Lys Gly Val Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 114
<211> 793
<212> DNA
<213> Solanum tuberosum

<400> 114

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aacttttgtg aagtctttaa tgaaggatgt tgtcagagaa gaagtcatca agtggctgga      60
tacagggatt gtgtacccaa tatctgacaa taaatgggca agtccagtgc agtgtgtgcc     120
taaaaaggga ggaatgacag ttgtgaccaa tgagaaaaat gagttgatcc ccacaagaac     180
agtaactggg tggaggctat gcatggacta cagaaaactc aatgaagcca ccaggaagga     240
ccactattcg gtaccgttca ttgatcaaat gttagacagg ttggctggcc aagagtatta     300
ctgtttcctt gatggttatt caaggtataa ttagatcgtc attgcacctg aggatcaaga     360
gaatacgaca ttcacttgcc catatggcac gtatgcattc aaacgcttgc cattcggctt     420
gtgcaatgcc ccaaccctat ttcagagatg tatgatggca atcttccatg atatggtgga     480
agattttgtt aaagtataca tggacgattt ctcggtgttt ggtgagtcgt tcgaactttg     540
tttatctaat cgtgatagag ttcttactag gtgtgaggag accaatttgg tgctgaactg     600
ggagaagtgt cactttctgg tcagagaagg aattatgttg gggcagaaga tctccaaaag     660
tgggctagaa gtagacaagg cgaaggtgga agtgattgag aagttgccac caccaatata     720
agtaaaggga gtgcgaagct tccttggaca tgctggtttt tacaagaggt tcataaagga     780
cttttcaaag gtt                                                       793
```

<210> 115
<211> 264
<212> PRT
<213> Solanum tuberosum

<400> 115

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Thr Phe Val Lys Ser Leu Met Lys Asp Val Val Arg Glu Glu Val Ile
 1               5                  10                  15
Lys Trp Leu Asp Thr Gly Ile Val Tyr Pro Ile Ser Asp Asn Lys Trp
            20                  25                  30
Ala Ser Pro Val Gln Cys Val Pro Lys Lys Gly Gly Met Thr Val Val
        35                  40                  45
Thr Asn Glu Lys Asn Glu Leu Ile Pro Thr Arg Thr Val Thr Gly Trp
    50                  55                  60
Arg Leu Cys Met Asp Tyr Arg Lys Leu Asn Glu Ala Thr Arg Lys Asp
65                  70                  75                  80
His Tyr Ser Val Pro Phe Ile Asp Gln Met Leu Asp Arg Leu Ala Gly
                85                  90                  95
Gln Glu Tyr Tyr Cys Phe Leu Asp Gly Tyr Ser Arg Tyr Asn Glx Ile
            100                 105                 110
Val Ile Ala Pro Glu Asp Gln Glu Asn Thr Thr Phe Thr Cys Pro Tyr
        115                 120                 125
Gly Thr Tyr Ala Phe Lys Arg Leu Pro Phe Gly Leu Cys Asn Ala Pro
    130                 135                 140
Thr Leu Phe Gln Arg Cys Met Met Ala Ile Phe His Asp Met Val Glu
145                 150                 155                 160
Asp Phe Val Lys Val Tyr Met Asp Asp Phe Ser Val Phe Gly Glu Ser
                165                 170                 175
Phe Glu Leu Cys Leu Ser Asn Arg Asp Arg Val Leu Thr Arg Cys Glu
            180                 185                 190
Glu Thr Asn Leu Val Leu Asn Trp Glu Lys Cys His Phe Leu Val Arg
```

```
        195                 200                 205
Glu Gly Ile Met Leu Gly Gln Lys Ile Ser Lys Ser Gly Leu Glu Val
    210                 215                 220
Asp Lys Ala Lys Val Glu Val Ile Glu Lys Leu Pro Pro Pro Ile Glx
225                 230                 235                 240
Val Lys Gly Val Arg Ser Phe Leu Gly His Ala Gly Phe Tyr Lys Arg
                245                 250                 255
Phe Ile Lys Asp Phe Ser Lys Val
            260
```

<210> 116
<211> 761
<212> DNA
<213> Platanus occidentalis

<400> 116

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gtgcgtaagg aggttttcaa acttcttaaa gtttgagtga tttatcctat ttaggatagg      60
aattgggtca gcccggttca agtggttcct aaaaagattg gaataaccgt tgtgaaaaat     120
tagaatgatg agttggttcc taccagtgtt cagaatgggt ggagggttgt atagattata     180
gaaaattgaa tgttgtaacc cgcaaggatc acttcccttt acctttttatt gatcaaatgc     240
ttgaaaggtt agttggtcat tcttactatt gtttcctaga tggttattca agttatttcc     300
agattgtaat tactccagag gattaagaaa agacaacttt tacatgtcca tttgggactt     360
ttgcatatcg ttgcatgccc tttggccttt gcaatgcccc aaccactttc caaaggtgta     420
tggttagcat attttcatat tacattgaga atatcataga agtttttatg gatgatttca     480
tagtttatgg agactccttt aataatttttc tgcataacct tacacttgtt cttcaaagat     540
gcatagaaac taaccttgtg ttaaattatg aaaaatgtca ttttatggtt gaacaaggta     600
tagttttggg tcatgttatt tcatctaaag gaattgaggt agataaagct aaagttgata     660
ttattcaatc tttaccttat ctcattagta tgcggaaagt tcattctttt cttggacatg     720
caggtttcta ccgaagattc attaaagact ttacaaaggt t                        761
```

<210> 117
<211> 254
<212> PRT
<213> Platanus occidentalis

<400> 117

```
Val Arg Lys Glu Val Phe Lys Leu Leu Lys Val Glx Val Ile Tyr Pro
 1               5                  10                  15
Ile Glx Asp Arg Asn Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
            20                  25                  30
Ile Gly Ile Thr Val Val Lys Asn Glx Asn Asp Glu Leu Val Pro Thr
        35                  40                  45
Ser Val Gln Asn Gly Trp Arg Val Cys Ile Asp Tyr Arg Lys Leu Asn
    50                  55                  60
Val Val Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Leu Val Gly His Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Ser Tyr Phe Gln Ile Val Ile Thr Pro Glu Asp Glx Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Cys Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Thr Thr Phe Gln Arg Cys Met Val Ser Ile
    130                 135                 140
Phe Ser Tyr Tyr Ile Glu Asn Ile Ile Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ile Val Tyr Gly Asp Ser Phe Asn Asn Phe Leu His Asn Leu Thr Leu
```

```
                165                 170                 175
Val Leu Gln Arg Cys Ile Glu Thr Asn Leu Val Leu Asn Tyr Glu Lys
            180                 185                 190
Cys His Phe Met Val Glu Gln Gly Ile Val Leu Gly His Val Ile Ser
        195                 200                 205
Ser Lys Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ile Ile Gln Ser
    210                 215                 220
Leu Pro Tyr Leu Ile Ser Met Arg Lys Val His Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 118
<211> 762
<212> DNA
<213> Platanus occidentalis

<400> 118

```
gtgcgtaagg aagttttcaa gcttcttgaa gttggagtga tttatcttat ttcgaatagc      60
aattgggtta gcccagttca agtggctcct aaaaagactg gaataaccgt tgtgaaaaat     120
cagaatgatg agttagttcc tacccatgtt cagaatgggt ggtgggtttg tataaattat     180
agaaaattaa atgttataac ctgcaaggat cacttccctt tacctttat tgataaaatg      240
cttgaaaggt tagctggtca ttcttactat tgtttccttg atggttattt aggttatttt     300
caaattgcaa ttacttcgga ggatcaagaa aagatgattt ttaagtgccc attcgggact     360
tttgcatatc gtcacatgcc ctttggcctt tgcaatgccc caaccacttt ctaaaggtgt     420
atggttagca tattttcaga ttacattgag aatatcatag aagtctttat ggatgatttc     480
acagtttatg gagactcctt tgataattgt ctgcataacc ttacacttgt tattcaaaga     540
tgcatagaaa ctaacctagt gttaaattct taaaaatgtc attttatggt tgaacaaggt     600
atagttttgg gtcatgttgt ttcatctagg ggaattgagg tagataaacc taaagttgat     660
attattcaaa ctttacctta ttccactagt gtgcgagaag ttcgttcttt tcttggacat     720
gtaggttttt actgaagatt cataaaagac ttcacaaagg tt                        762
```

<210> 119
<211> 254
<212> PRT
<213> Platanus occidentalis

<400> 119

```
Val Arg Lys Glu Val Phe Lys Leu Leu Glu Val Gly Val Ile Tyr Leu
 1               5                  10                  15
Ile Ser Asn Ser Asn Trp Val Ser Pro Val Gln Val Ala Pro Lys Lys
            20                  25                  30
Thr Gly Ile Thr Val Val Lys Asn Gln Asn Asp Glu Leu Val Pro Thr
        35                  40                  45
His Val Gln Asn Gly Trp Trp Val Cys Ile Asn Tyr Arg Lys Leu Asn
    50                  55                  60
Val Ile Thr Cys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Lys Met
65                  70                  75                  80
Leu Glu Arg Leu Ala Gly His Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Leu Gly Tyr Phe Gln Ile Ala Ile Thr Ser Glu Asp Gln Glu Lys Met
            100                 105                 110
Ile Phe Lys Cys Pro Phe Gly Thr Phe Ala Tyr Arg His Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Thr Thr Phe Glx Arg Cys Met Val Ser Ile
    130                 135                 140
Phe Ser Asp Tyr Ile Glu Asn Ile Ile Glu Val Phe Met Asp Asp Phe
```

```
145                 150                 155                 160
Thr Val Tyr Gly Asp Ser Phe Asp Asn Cys Leu His Asn Leu Thr Leu
                165                 170                 175
Val Ile Gln Arg Cys Ile Glu Thr Asn Leu Val Leu Asn Ser Glx Lys
            180                 185                 190
Cys His Phe Met Val Glu Gln Gly Ile Val Leu Gly His Val Val Ser
        195                 200                 205
Ser Arg Gly Ile Glu Val Asp Lys Pro Lys Val Asp Ile Ile Gln Thr
    210                 215                 220
Leu Pro Tyr Ser Thr Ser Val Arg Glu Val Arg Ser Phe Leu Gly His
225                 230                 235                 240
Val Gly Phe Tyr Glx Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 120
<211> 759
<212> DNA
<213> Platanus occidentalis

<400> 120

```
gtgcggaaag aggtttttaa gcttttggat gtagggatta tatacccaat tttttatagt      60
aattaggtaa gtcccactca agtggaccca agaattctgg tgtgactgta gttaaaaatg     120
caaatgatga attgattcca aatagactca ctattggttg gcgtgtatgc attaactata     180
agaagttgaa ctcagtgact aggaaggacc atttcccttt accattcatg actaaatcct     240
agaaagggta gctggtcaca aattttatta tttcctatat ggttattcta gatataacta     300
aatagagatt gcacctgagg actaagaaaa taccactttt acatgtccat ttggcacttt     360
tgcttatcga aggatgtcat ttggattatg taatgctctt gccacgttct aaagatgcat     420
gttgagtata tttagtgata tggtagaaca ttttcttgag gtgtttatgg attttttttg     480
tttttggtaa ttcatttgat gattgtttgc ataatttgaa aaaagtgtta aatagatgtg     540
aaggaaaaaa acatcatttt gaattgagag aagtgtcatt tcatggtctc taaaagaatt     600
gtacttggtc acattgtctc ctcccaagga attaaagtgg tcaaagccaa aattgaattg     660
atagtcaatt tgcctagccc aaagactctt aaagacattc gatcttttct aggtcatgca     720
ggatttaaca aaaggttcat caaagacttc acgaaagtt                            759
```

<210> 121
<211> 254
<212> PRT
<213> Platanus occidentalis

<400> 121

```
Val Arg Lys Glu Val Phe Lys Leu Leu Asp Val Gly Ile Ile Tyr Pro
 1               5                  10                  15
Ile Phe Tyr Ser Asn Glx Val Ser Pro Thr Gln Val Val Pro Lys Asn
            20                  25                  30
Ser Gly Val Thr Val Val Lys Asn Ala Asn Asp Glu Leu Ile Pro Asn
        35                  40                  45
Arg Leu Thr Ile Gly Trp Arg Val Cys Ile Asn Tyr Lys Lys Leu Asn
    50                  55                  60
Ser Val Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Glx Ile
65                  70                  75                  80
Leu Glu Arg Val Ala Gly His Lys Phe Tyr Tyr Phe Leu Tyr Gly Tyr
                85                  90                  95
Ser Arg Tyr Asn Glx Ile Glu Ile Ala Pro Glu Asp Glx Glu Asn Thr
            100                 105                 110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Ser Phe
        115                 120                 125
Gly Leu Cys Asn Ala Leu Ala Thr Phe Glx Arg Cys Met Leu Ser Ile
```

```
    130                 135                 140
Phe Ser Asp Met Val Glu His Phe Leu Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Phe Val Phe Gly Asn Ser Phe Asp Asp Cys Leu His Asn Leu Lys Lys
                165                 170                 175
Val Leu Asn Arg Cys Glu Glu Lys Asn Ile Ile Leu Asn Glx Glu Lys
            180                 185                 190
Cys His Phe Met Val Ser Lys Arg Ile Val Leu Gly His Ile Val Ser
        195                 200                 205
Ser Gln Gly Ile Lys Val Val Lys Ala Lys Ile Glu Leu Ile Val Asn
    210                 215                 220
Leu Pro Ser Pro Lys Thr Leu Lys Asp Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Asn Lys Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 122
<211> 761
<212> DNA
<213> Platanus occidentalis

<400> 122

```
tgcgtaaaga ggtggtcaag cttcttgaag ttggagtgat ttatcctatt tcggatagca      60
attgggttag cccggttcaa gtggttccta aaaagactgg aataaccgtt gtgaaaaatc     120
aaaatgatga gttagttcct acccgtgttc agaatgggtg gcaggtttgt atagattata     180
taaaattaaa tgttgtaacc cgcaaggatc acttcccttt acctttttatt gatcaaatgt     240
ttgaaaggtt agctggtcat tcttactatt gtttccttga tggatattca tgttattttt     300
agattgcaat tactccagag gatcaagaaa agacgacttt tacgtgccca ttcgggactt     360
tttcatatcg ttgcatgccc tttggccttt gcaacgcccc agccactttc caaaggtgta     420
tggttagcat attttcagat tacattgaga atatcataga agtctttatg gatgatttca     480
tagtttatga agactccttt gataattgtc tgcataacct tacacttgtt ttttaaagat     540
gcatagaaac taaccttgtg ttaaattttg aaaaatgtca tgttatggtt gaataaggta     600
tagttttggg tcatgttgtt tcatctatgg gaattgaggt agataaagtt aaagttgata     660
ttattcaatc tttaccttat cccattagtg tgcaggaagt tcgttctttt cttggacatg     720
cgggttttta ccaaagattc attaaagact tcacgaaagt t                         761
```

<210> 123
<211> 253
<212> PRT
<213> Platanus occidentalis

<400> 123

```
Arg Lys Glu Val Val Lys Leu Leu Glu Val Gly Val Ile Tyr Pro Ile
 1               5                  10                  15
Ser Asp Ser Asn Trp Val Ser Pro Val Gln Val Val Pro Lys Lys Thr
            20                  25                  30
Gly Ile Thr Val Val Lys Asn Gln Asn Asp Glu Leu Val Pro Thr Arg
        35                  40                  45
Val Gln Asn Gly Trp Gln Val Cys Ile Asp Tyr Ile Lys Leu Asn Val
    50                  55                  60
Val Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met Phe
65                  70                  75                  80
Glu Arg Leu Ala Gly His Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr Ser
                85                  90                  95
Cys Tyr Phe Glx Ile Ala Ile Thr Pro Glu Asp Gln Glu Lys Thr Thr
            100                 105                 110
Phe Thr Cys Pro Phe Gly Thr Phe Ser Tyr Arg Cys Met Pro Phe Gly
```

```
        115                 120                 125
Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Val Ser Ile Phe
    130                 135                 140
Ser Asp Tyr Ile Glu Asn Ile Ile Glu Val Phe Met Asp Asp Phe Ile
145                 150                 155                 160
Val Tyr Glu Asp Ser Phe Asp Asn Cys Leu His Asn Leu Thr Leu Val
                165                 170                 175
Phe Glx Arg Cys Ile Glu Thr Asn Leu Val Leu Asn Phe Glu Lys Cys
            180                 185                 190
His Val Met Val Glu Glx Gly Ile Val Leu Gly His Val Val Ser Ser
        195                 200                 205
Met Gly Ile Glu Val Asp Lys Val Lys Val Asp Ile Ile Gln Ser Leu
    210                 215                 220
Pro Tyr Pro Ile Ser Val Gln Glu Val Arg Ser Phe Leu Gly His Ala
225                 230                 235                 240
Gly Phe Tyr Gln Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 124
<211> 761
<212> DNA
<213> Sorghum bicolor

<400> 124

```
gtgcgtaaag aggtcttcaa gctctatcat gctgggatta tttatcctgt gccgcatagt      60
gagtgggtta gccctgttca agtagtgcca aagaaaggag gaatgacggt cgttaggaat     120
gagaagaatg aactcatccc tcaacgaatt gtcactgggt ggcgtatgtg tattgactat     180
caaaaactca acacggctac aaagaaagat aactttccgt tacccttcat tgatgaaatg     240
ttggaacggc ttgcaaacca ctctttcttc tgtttccttg atggttattc tggatatcac     300
caaatcccaa tccacccaga tgaccaagaa aagactacct ttacatgccc gtatggaact     360
tatgcataac gacgaatgtc gttcggactg tgcaatgctc cagcttcttt ccaacggtgc     420
atgatgtcta ttttctcgga catgattgag aagatcatgg aggttttcat ggatgatttt     480
accgtctatg gtaaaacctt cgatcattgt ttggagaatt tagatagagt cttgcagcga     540
tgtgaagaaa agcacttaat cctgaactgg gagaaatgcc attttatggt tcaggaagga     600
atagtgctag gacataaagt gtccgaacgt ggtatagagg tggacaaagc aaagattgaa     660
gttattgaaa aacttccacc tcccacgaat gtgaaaggat ccgtagcttc ttgggacatg     720
cagggttcta tagatgcttc ataaaagact tcacaaaggt t                        761
```

<210> 125
<211> 254
<212> PRT
<213> Sorghum bicolor

<400> 125

```
Val Arg Lys Glu Val Phe Lys Leu Tyr His Ala Gly Ile Ile Tyr Pro
 1               5                  10                  15
Val Pro His Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Thr Val Val Arg Asn Glu Lys Asn Glu Leu Ile Pro Gln
        35                  40                  45
Arg Ile Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Gln Lys Leu Asn
    50                  55                  60
Thr Ala Thr Lys Lys Asp Asn Phe Pro Leu Pro Phe Ile Asp Glu Met
65                  70                  75                  80
Leu Glu Arg Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Gly Tyr His Gln Ile Pro Ile His Pro Asp Asp Gln Glu Lys Thr
```

```
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Glx Arg Arg Met Ser Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile
    130                 135                 140
Phe Ser Asp Met Ile Glu Lys Ile Met Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Thr Val Tyr Gly Lys Thr Phe Asp His Cys Leu Glu Asn Leu Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Glu Lys His Leu Ile Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Val Ser
        195                 200                 205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Glu Val Ile Glu Lys
    210                 215                 220
Leu Pro Pro Pro Thr Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Cys Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 126
<211> 762
<212> DNA
<213> Sorghum bicolor

<400> 126

```
gtgcggaagg aggtccttaa attgctgcat gcagggatta tatatcctgt gccgcacagt      60
gagtgggtga gcccagtaca agttgtgcct aaaaaaggag gcatgactgt tattataaat     120
gaaaagaacg agctaattcc gcaacgcacc gtcacaggat ggcagatgtg catagactat     180
agaaaactaa acaaagccac gagaaaggat cactttcctt taccttttat agatgagatg     240
ctagagcggt tagcaaacca ttcgttcttc tgtttcttag atggatattc agggtatcat     300
cagatcccga tccatcccga tgatcaaagc aaaaccactt ttacatgccc ttatggaact     360
tatgcttacc gtagaatgtc ttttgggtta tgtaatgcac cagcttcttt tcaaagatgc     420
atgatgtcta tattttctga tatgattgaa gagattatgg aagttttcat ggatgatttc     480
tctgtttatg gaaaagcttt tgatagttgt cttgaaaact tagacaaggt tttgcaaagt     540
tgtgaagaaa agcacttaat ccttaattgg gaaaaatgtc attttatggt tagggaagga     600
atagtgctag gacacttagt gtctgaaagg ggtattgagg tagacaaagc tgaaattgaa     660
gtaattgaac aactacctcc acctgtgaat ataaaaggaa ttcgaagctt tcttggccat     720
gctggttttt atcgtagatt catcaaagat ttcacgaaag tt                        762
```

<210> 127
<211> 254
<212> PRT
<213> Sorghum bicolor

<400> 127

```
Val Arg Lys Glu Val Leu Lys Leu Leu His Ala Gly Ile Ile Tyr Pro
 1               5                  10                  15
Val Pro His Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Thr Val Ile Ile Asn Glu Lys Asn Glu Leu Ile Pro Gln
        35                  40                  45
Arg Thr Val Thr Gly Trp Gln Met Cys Ile Asp Tyr Arg Lys Leu Asn
    50                  55                  60
Lys Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
65                  70                  75                  80
Leu Glu Arg Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr
```

```
                85                  90                  95
Ser Gly Tyr His Gln Ile Pro Ile His Pro Asp Asp Gln Ser Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Ser Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile
    130                 135                 140
Phe Ser Asp Met Ile Glu Glu Ile Met Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Lys Ala Phe Asp Ser Cys Leu Glu Asn Leu Asp Lys
                165                 170                 175
Val Leu Gln Ser Cys Glu Glu Lys His Leu Ile Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Leu Val Ser
        195                 200                 205
Glu Arg Gly Ile Glu Val Asp Lys Ala Glu Ile Glu Val Ile Glu Gln
    210                 215                 220
Leu Pro Pro Pro Val Asn Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 128
<211> 762
<212> DNA
<213> Sorghum bicolor

<400> 128

```
gtgcggaagg aagtcttaaa gcttttacac actaggatta tttatctcgt tcctcatagt      60
gagtgggtta gcacggtaca agttgtgcca aagaaaggag gaatgtcggt tgttaggaat     120
gagaagaacg aattcatccc tcaacaaact gtcactgggt ggcgtatgtg cattgactac     180
caaaaactca acaaggccac aaggaaagat cacttcccgt tacctttcat tgatgaaatg     240
ttgtaatggc ttacaaatca ctcgttcttt tgtttccttg aagggtattc cagatatcat     300
caaatcccga tccaccacga tgaccaaagt aagactactt tcacatgacc ctatggaact     360
tacgcatacc gacgaatgtc gttcaggtta tgtaatgctc cagcttcttt tcaacggtgc     420
atgatgtcta ttttttccaa tatgattgag aaaatcatgg aggtattcac ggatgatttt     480
accgtatatg gcaaaacctt tgatgattgt ttagagaatt tggacaaagt cttacaattg     540
tgtgaaggaa agcacttaat cgtaaactag gagaaatgcc attttatggt ccgagaagga     600
atagtgctag ggcacaaggt gtccgaacgt gggatagagg tggatagagc caagattgaa     660
gttattgaaa aacttccacc tcccacaaat gtgaaagaca tccgcagttt tcttggacat     720
gcagggttct ataggcgctt catcaaagat ttcaccaagg tt                        762
```

<210> 129
<211> 254
<212> PRT
<213> Sorghum bicolor

<400> 129

```
Val Arg Lys Glu Val Leu Lys Leu Leu His Thr Arg Ile Ile Tyr Leu
 1               5                  10                  15
Val Pro His Ser Glu Trp Val Ser Thr Val Gln Val Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Ser Val Val Arg Asn Glu Lys Asn Glu Phe Ile Pro Gln
        35                  40                  45
Gln Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Gln Lys Leu Asn
    50                  55                  60
Lys Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
```

```
65                  70                  75                  80
Leu Glx Trp Leu Thr Asn His Ser Phe Phe Cys Phe Leu Glu Gly Tyr
                85                  90                  95
Ser Arg Tyr His Gln Ile Pro Ile His His Asp Asp Gln Ser Lys Thr
            100                 105                 110
Thr Phe Thr Glx Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Ser Phe
        115                 120                 125
Arg Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile
    130                 135                 140
Phe Ser Asn Met Ile Glu Lys Ile Met Glu Val Phe Thr Asp Asp Phe
145                 150                 155                 160
Thr Val Tyr Gly Lys Thr Phe Asp Asp Cys Leu Glu Asn Leu Asp Lys
                165                 170                 175
Val Leu Gln Leu Cys Glu Gly Lys His Leu Ile Val Asn Glx Glu Lys
            180                 185                 190
Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Lys Val Ser
        195                 200                 205
Glu Arg Gly Ile Glu Val Asp Arg Ala Lys Ile Glu Val Ile Glu Lys
    210                 215                 220
Leu Pro Pro Pro Thr Asn Val Lys Asp Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 130
<211> 761
<212> DNA
<213> Sorghum bicolor

<400> 130

```
gtgcgtaagg aggtttttaa gctgctgcat gcagagatta tatatcatgt gccgcacagt      60
gagtgggtaa gcccagttca agttgtgcct aaaaagggag gcatgattgt tgttacgaat     120
gaaaagaacg agctaattcc gcaacgcacc gtcacagggt ggcggatgtg catagactat     180
agaaaactaa acaaagccac gagaaaggat cattttcctt tacctttcat agatgagatg     240
ctagagcgat tagcaaacca ttcgttcttc tgtttcttag atggataatt agggtatcac     300
cagatcccaa tcaatcttga tgatcaaagc aaaaccactt ttccatgccc acatggaact     360
tatgcttacc gtagaatgtc ttttgggtta tgtaatgcac cagcttcttt tcaaagatgc     420
atgatgtctg tattttctaa tatgattgaa gagattatgg aattttcatg gatgatttct     480
ctgtttatgg aaaaactttt gatagttgtc ttgaaaactt agacagggtt ttgcaaagat     540
gtgaagaaaa gtacttagtc cttaattgga aaaaatgtca ttttatggtt agggaaggaa     600
tagtgctggg acacctagtg tctgaaagag gtattgaggt cgacaaagct aaaattgaag     660
taattgaaca actacctcca cctttgaata taaaaggaat tcgaagcttt cttggccatg     720
ctggttttta tcgtagattc attaaggact ttacaaaggt t                         761
```

<210> 131
<211> 254
<212> PRT
<213> Sorghum bicolor

<400> 131

```
Val Arg Lys Glu Val Phe Lys Leu Leu His Ala Glu Ile Ile Tyr His
 1               5                  10                  15
Val Pro His Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Ile Val Val Thr Asn Glu Lys Asn Glu Leu Ile Pro Gln
        35                  40                  45
Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
```

```
    50                  55                  60
Lys Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
65                  70                  75                  80
Leu Glu Arg Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Glx
                85                  90                  95
Leu Gly Tyr His Gln Ile Pro Ile Asn Leu Asp Asp Gln Ser Lys Thr
            100                 105                 110
Thr Phe Pro Cys Pro His Gly Thr Tyr Ala Tyr Arg Arg Met Ser Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Val
    130                 135                 140
Phe Ser Asn Met Ile Glu Glu Ile Met Glu Ile Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Tyr Gly Lys Thr Phe Asp Ser Cys Leu Glu Asn Leu Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Glu Lys Tyr Leu Val Leu Asn Trp Lys Lys
            180                 185                 190
Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Leu Val Ser
        195                 200                 205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Glu Val Ile Glu Gln
    210                 215                 220
Leu Pro Pro Pro Leu Asn Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 132
<211> 763
<212> DNA
<213> Sorghum bicolor

<400> 132

```
gtgcggaaag aggtcgtcaa gctctatcat gctgggatta tttatcctgt gccacatagt      60
gagtgggtta gccctgttca agtagtgcca aagaaagaag gaatgacggt cgttaggaat     120
gagaagaatg aactcatccc tcaacaaatt gtcactagat ggcgtatgtg tattgactat     180
cgaaaactca acaaagctac aaagaaagat cactttccgt tacccttcat tgatgaaatg     240
ttggaatggc ttgcaaacca ctctttcttc tgtttccttg atggttattc tggatatcac     300
caaatcccaa tccacccaga tgaccaagaa aagactacct ttacatgccc gtattgaact     360
tatgcatact gacgaatgtc gttcggattg tgcaatgctc tagcttcttt tccagcggtg     420
catgatgtct attttctcgg acatgattga gaagatcatg gaggttttca tggatgattt     480
taccgtctat ggcaaaacct tcgatcattg tttggagaat ttagatagag tcttgcagcg     540
atgtgaggaa aatcacttaa tcttgaactg ggagaaatgt cattttatgg ttcaggaagg     600
aatagtgcta ggacataaag tgtccgaacg tggtatagat gtggacaaag caaagattaa     660
agttattgaa aaacttccac ctcacacgaa tgtgaaagga atccatagct ttttgggaca     720
tgcagggttc tatagacgct tcatcaagga tttcacaaag gtt                       763
```

<210> 133
<211> 254
<212> PRT
<213> Sorghum bicolor

<400> 133

```
Val Arg Lys Glu Val Val Lys Leu Tyr His Ala Gly Ile Ile Tyr Pro
 1               5                  10                  15
Val Pro His Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
            20                  25                  30
Glu Gly Met Thr Val Val Arg Asn Glu Lys Asn Glu Leu Ile Pro Gln
```

```
        35                  40                  45
Gln Ile Val Thr Arg Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
    50                  55                  60
Lys Ala Thr Lys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
65                  70                  75                  80
Leu Glu Trp Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Gly Tyr His Gln Ile Pro Ile His Pro Asp Asp Gln Glu Lys Thr
            100                 105                 110
Thr Phe Thr Cys Pro Tyr Glx Thr Tyr Ala Tyr Glx Arg Met Ser Phe
        115                 120                 125
Gly Leu Cys Asn Ala Leu Ala Ser Phe Gln Arg Cys Met Met Ser Ile
    130                 135                 140
Phe Ser Asp Met Ile Glu Lys Ile Met Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Thr Val Tyr Gly Lys Thr Phe Asp His Cys Leu Glu Asn Leu Asp Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Glu Asn His Leu Ile Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Val Ser
        195                 200                 205
Glu Arg Gly Ile Asp Val Asp Lys Ala Lys Ile Lys Val Ile Glu Lys
    210                 215                 220
Leu Pro Pro His Thr Asn Val Lys Gly Ile His Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 134
<211> 756
<212> DNA
<213> Sorghum bicolor

<400> 134

```
aaggaggttt tcaagttgct gcatgcaggg attatatatc ttgtgccgca tagtgagtgg      60
gtaagcccag ttcaagttgt gcctaaaaag ggaggcatga ctattattat gaatgaaaag     120
aacgagctaa ttccgcaacg caccgttaca gtatggcgga tgtgcataga ctatagaaaa     180
ctaaacaaag ccacgagaga ggatcacttt cctttacctt tcatagatga gatgctagag     240
tggttagcaa accattcgtt cttctgtttc ttagatggat attgagggta tcatcagatc     300
ccgatccatc ccgatgatca aagcaaaacc acttttacat gcccatatgg aacttatgct     360
taccgtagaa tgtcttttgg gttatgtaat gcactagctt cttttcaaag atgcatgatg     420
tctatatttt ctgatatgat tgaagagatt atggaagttt tcatggatga tttctctgtt     480
tatggaaaaa cttttgatag ttgtcttaaa aacttagaca aggttttgca aagatgtgaa     540
gaaaagcact tagtccttaa ttgggaaaaa tgtcatttca tggttaggga aggaatagtg     600
ctgggacact tagtgtctga aagagctatt gaggtagata aagctaaaat tgaagtaatt     660
gaacaactac gtccacctgt gaacataaaa ggaatttgaa gctttcttgg ccatgctggt     720
tttcatcgta gattcataaa agactttaca aaggtt                               756
```

<210> 135
<211> 252
<212> PRT
<213> Sorghum bicolor

<400> 135

```
Lys Glu Val Phe Lys Leu Leu His Ala Gly Ile Ile Tyr Leu Val Pro
 1               5                  10                  15
His Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys Gly Gly
```

```
            20                  25                  30
Met Thr Ile Ile Met Asn Glu Lys Asn Glu Leu Ile Pro Gln Arg Thr
        35                  40                  45
Val Thr Val Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn Lys Ala
    50                  55                  60
Thr Arg Glu Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met Leu Glu
65                  70                  75                  80
Trp Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr Glx Gly
                85                  90                  95
Tyr His Gln Ile Pro Ile His Pro Asp Asp Gln Ser Lys Thr Thr Phe
            100                 105                 110
Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Ser Phe Gly Leu
        115                 120                 125
Cys Asn Ala Leu Ala Ser Phe Gln Arg Cys Met Met Ser Ile Phe Ser
    130                 135                 140
Asp Met Ile Glu Glu Ile Met Glu Val Phe Met Asp Asp Phe Ser Val
145                 150                 155                 160
Tyr Gly Lys Thr Phe Asp Ser Cys Leu Lys Asn Leu Asp Lys Val Leu
                165                 170                 175
Gln Arg Cys Glu Glu Lys His Leu Val Leu Asn Trp Glu Lys Cys His
            180                 185                 190
Phe Met Val Arg Glu Gly Ile Val Leu Gly His Leu Val Ser Glu Arg
        195                 200                 205
Ala Ile Glu Val Asp Lys Ala Lys Ile Glu Val Ile Glu Gln Leu Arg
    210                 215                 220
Pro Pro Val Asn Ile Lys Gly Ile Glx Ser Phe Leu Gly His Ala Gly
225                 230                 235                 240
Phe His Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 136
<211> 762
<212> DNA
<213> Glycine max

<400> 136

```
gtgcgtaagg aggttgtcaa gcttttggag gttgggctca tatacctcat ctctgacagc      60
gcttgggtaa gcctagtaca ggtggctccc aagaaatgcg gaatgacagt ggtacaaaat     120
gagaggaatg acttgatacc aacacgaact gtcactggct agcggatgtg tatcgactac     180
tgcaagttga atgaagccac acggaaggac catttcccct tacctttcat ggatcagatg     240
ctggagaggc ttgcagggca ggcatactac tgtttcttgg atagatattc aggatacaac     300
caaatcgcgg tagaccccag agatcaggag aagatggcct ttacatgccc ctttggcgtc     360
tttgcttaca gaaggatgtc attcaggtta tgtaacgcac cagccacatt tcagaggtgc     420
gtgctggcca ttttttcaga catggtggag aagagcatcg aggtatttat ggatgaattc     480
tcgatttttg gacccttatt tgacagttgc ttaaggaact tagagatggt actacagagg     540
tgcgtataga ctaacttggt actaaattag gaaaaatgtc atttcatggt tcgagaggga     600
atagtgatgg accacaatat ctcagctaga gggattgagg ttgatcaggc aaagatagac     660
gtcattgaga agttgccacc accactgaat gttaaaggcg tcagaagttt cttagggcat     720
gcaggtttct acaggaggtt tatcaaggac ttcaccaagg tt                        762
```

<210> 137
<211> 254
<212> PRT
<213> Glycine max

<400> 137

```
Val Arg Lys Glu Val Val Lys Leu Leu Glu Val Gly Leu Ile Tyr Leu
```

```
 1               5                  10                  15
Ile Ser Asp Ser Ala Trp Val Ser Leu Val Gln Val Ala Pro Lys Lys
            20                  25                  30
Cys Gly Met Thr Val Val Gln Asn Glu Arg Asn Asp Leu Ile Pro Thr
        35                  40                  45
Arg Thr Val Thr Gly Glx Arg Met Cys Ile Asp Tyr Cys Lys Leu Asn
    50                  55                  60
Glu Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Leu Ala Gly Gln Ala Tyr Tyr Cys Phe Leu Asp Arg Tyr
                85                  90                  95
Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Arg Asp Gln Glu Lys Met
            100                 105                 110
Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Ser Phe
        115                 120                 125     .
Arg Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Val Leu Ala Ile
    130                 135                 140
Phe Ser Asp Met Val Glu Lys Ser Ile Glu Val Phe Met Asp Glu Phe
145                 150                 155                 160
Ser Ile Phe Gly Pro Leu Phe Asp Ser Cys Leu Arg Asn Leu Glu Met
                165                 170                 175
Val Leu Gln Arg Cys Val Glx Thr Asn Leu Val Leu Asn Glx Glu Lys
            180                 185                 190
Cys His Phe Met Val Arg Glu Gly Ile Val Met Asp His Asn Ile Ser
        195                 200                 205
Ala Arg Gly Ile Glu Val Asp Gln Ala Lys Ile Asp Val Ile Glu Lys
    210                 215                 220
Leu Pro Pro Pro Leu Asn Val Lys Gly Val Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 138
<211> 763
<212> DNA
<213> Glycine max

<400> 138

```
gtgcgtaagg aggtctttaa gttcttggag gctgggctca tatatcccat ctctaatagc      60
acttaggtaa gcccagtaca ggtggttccc aagaaaggtg gaatgacagt agtacagaat     120
gagaagaatg acttgatacc aacacgaact gtcactagct ggcgaatatg catcgattat     180
cgcaagctga atgaggccac ccggaaggac cacttccctc tacctttcat ggatcagatg     240
ttggagagac ttgcagggca ggcgtattat tgtttcttgg atggatactc gagatataat     300
cagattgcgg tggaccctag agaccaagag aagacgacct tcacatgccc tttttggcgt     360
ctttgcttac agaaggatgc cattcgggtt atgtaatgca ccagccacat ttcagaggtg     420
catgctggcc atttttttcag acatggtgga gaaaaatatc gaggtattca tggatgactt     480
ttcagttttt gggccctcat ttgacagttg tttgaggaac ctagagatgg tactttagag     540
gtgcgtagag actaatttag tgctgaactg ggagaagtgt cattttatgg ttcgagaggg     600
catagtcctg agccacaaga tctcagctag agggattgag gttgaccggg caaagataga     660
cgtcatagag aagctgccac caccattgaa tattaaaggt gtcagaagtt tcttagggca     720
tgcaggattc tacaggagat tcataaagga ctttacaaag gtt                       763
```

<210> 139
<211> 254
<212> PRT
<213> Glycine max

<400> 139
Val Arg Lys Glu Val Phe Lys Phe Leu Glu Ala Gly Leu Ile Tyr Pro
1 5 10 15
Ile Ser Asn Ser Thr Glx Val Ser Pro Val Gln Val Val Pro Lys Lys
20 25 30
Gly Gly Met Thr Val Val Gln Asn Glu Lys Asn Asp Leu Ile Pro Thr
35 40 45
Arg Thr Val Thr Ser Trp Arg Ile Cys Ile Asp Tyr Arg Lys Leu Asn
50 55 60
Glu Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ala Gly Gln Ala Tyr Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Arg Tyr Asn Gln Ile Ala Val Asp Pro Arg Asp Gln Glu Lys Thr
100 105 110
Thr Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Pro Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Leu Ala Ile
130 135 140
Phe Ser Asp Met Val Glu Lys Asn Ile Glu Val Phe Met Asp Asp Phe
145 150 155 160
Ser Val Phe Gly Pro Ser Phe Asp Ser Cys Leu Arg Asn Leu Glu Met
165 170 175
Val Leu Glx Arg Cys Val Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Arg Glu Gly Ile Val Leu Ser His Lys Ile Ser
195 200 205
Ala Arg Gly Ile Glu Val Asp Arg Ala Lys Ile Asp Val Ile Glu Lys
210 215 220
Leu Pro Pro Pro Leu Asn Ile Lys Gly Val Arg Ser Phe Leu Gly His
225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 140
<211> 762
<212> DNA
<213> Glycine max

<400> 140
gtgcgcaagg aggttttgaa gcttctagag gttgggctta tctaccccat ctccgacagc 60
gcttgggtaa gcccagtctt ggtggtgtcg aagaaagagg gcatgacagt cattcgaaat 120
gaaaagaatg acctgatacc aacacgaact gtcactagtt ggaaattatg catcgattac 180
cgcaagctca acgaagccac aaggaaagac catttccctc tacccttcat ggatcagatg 240
ttggagagac ttgcaggaca cgcttattat tgcttcttgg atgcatactt tggatataat 300
cagattgttg tagaccccaa ggatcaggag aagatggcct tcacatgccc ttttggtgtc 360
tttgcctata gacggattcc atttgggttg tgcaatgcac ctaccacatt ccaaatgtgc 420
atgttggcca tttttgcaga tatagtggag aaaagcatcg aagtattcat ggatgacttt 480
tcagtatttg tgccctcatt agaaagttgt ttgaagaagt tggagatggt actacaaaga 540
tgcgtggaaa caaacttagt actaaattgg gagaagtgtc acttcatggt tcgagaaggc 600
atagtcttag gccataaaat ttcgacccga ggaattgagg tagaccaaac aaagattgat 660
gtcattgaaa agttgccacc accatcaaat gttaaaggca tcaggagctt cctaggacaa 720
gccaggttct acagaagatt catcaaggac ttcacaaaag tt 762

<210> 141
<211> 254
<212> PRT

<213> Glycine max

<400> 141

```
Val Arg Lys Glu Val Leu Lys Leu Leu Glu Val Gly Leu Ile Tyr Pro
 1               5                  10                  15
Ile Ser Asp Ser Ala Trp Val Ser Pro Val Leu Val Val Ser Lys Lys
            20                  25                  30
Glu Gly Met Thr Val Ile Arg Asn Glu Lys Asn Asp Leu Ile Pro Thr
        35                  40                  45
Arg Thr Val Thr Ser Trp Lys Leu Cys Ile Asp Tyr Arg Lys Leu Asn
    50                  55                  60
Glu Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Leu Ala Gly His Ala Tyr Tyr Cys Phe Leu Asp Ala Tyr
                85                  90                  95
Phe Gly Tyr Asn Gln Ile Val Val Asp Pro Lys Asp Gln Glu Lys Met
            100                 105                 110
Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Ile Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Thr Thr Phe Gln Met Cys Met Leu Ala Ile
    130                 135                 140
Phe Ala Asp Ile Val Glu Lys Ser Ile Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Val Phe Val Pro Ser Leu Glu Ser Cys Leu Lys Lys Leu Glu Met
                165                 170                 175
Val Leu Gln Arg Cys Val Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195                 200                 205
Thr Arg Gly Ile Glu Val Asp Gln Thr Lys Ile Asp Val Ile Glu Lys
    210                 215                 220
Leu Pro Pro Pro Ser Asn Val Lys Gly Ile Arg Ser Phe Leu Gly Gln
225                 230                 235                 240
Ala Arg Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250
```

<210> 142
<211> 762
<212> DNA
<213> Glycine max

<400> 142

```
gtgcggaagg aggttattaa gttgctagag gcagggctca tttacctaat ctcagatagt      60
tcataggtta gtcctgttca tgttgctctg aaaaagggag gtatgacagt gataaagaat     120
gatagagatg agttaattcc tacaagaata gttactggat ggaggatggg tattgattac     180
aagaagctaa atgaagccac caggaaagac cattacccgc ttcccttcat ggatcaaatg     240
cttgagagac ttgcagggca atcttcctac tatttattag atggatactc gggctacaat     300
caaattgcag tggatcctca ggaccaagaa aagacagctt tcacatgtcc ttttggtgta     360
tttgcttatc gccgcatgtc gttcggttta tgtaatgccc caactacttt ccagagatgt     420
atgatggcaa tttttgctga catggtaaag aaatgtattg aagtttttat ggacgatttc     480
tctgtctttg gtgcatcttt tgaaaattgc ctagcaaatt tagagaaagt gttacaacgc     540
tatgaagaat ctaatttggt gctcaactgg gaaaaatgtc actttatggt tcaagaaggt     600
atcatgctgg gacacaagat ttctagaaga ggaattaagg tggataaggc aaagattgag     660
gttattgata aacttccacc tctagttaat gttagaggca tacgaagttt tttgggtcat     720
gctagattct atcgatgatt tatcaaggac ttcaccaaag tt                        762
```

<210> 143

<211> 254
<212> PRT
<213> Glycine max

<400> 143
Val Arg Lys Glu Val Ile Lys Leu Leu Glu Ala Gly Leu Ile Tyr Leu
 1   5   10   15
Ile Ser Asp Ser Ser Glx Val Ser Pro Val His Val Ala Leu Lys Lys
            20   25   30
Gly Gly Met Thr Val Ile Lys Asn Asp Arg Asp Glu Leu Ile Pro Thr
        35   40   45
Arg Ile Val Thr Gly Trp Arg Met Gly Ile Asp Tyr Lys Lys Leu Asn
    50   55   60
Glu Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Met Asp Gln Met
65   70   75   80
Leu Glu Arg Leu Ala Gly Gln Ser Ser Tyr Tyr Leu Leu Asp Gly Tyr
                85   90   95
Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Gln Asp Gln Glu Lys Thr
            100   105   110
Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Ser Phe
        115   120   125
Gly Leu Cys Asn Ala Pro Thr Thr Phe Gln Arg Cys Met Met Ala Ile
    130   135   140
Phe Ala Asp Met Val Lys Lys Cys Ile Glu Val Phe Met Asp Asp Phe
145   150   155   160
Ser Val Phe Gly Ala Ser Phe Glu Asn Cys Leu Ala Asn Leu Glu Lys
                165   170   175
Val Leu Gln Arg Tyr Glu Glu Ser Asn Leu Val Leu Asn Trp Glu Lys
            180   185   190
Cys His Phe Met Val Gln Glu Gly Ile Met Leu Gly His Lys Ile Ser
        195   200   205
Arg Arg Gly Ile Lys Val Asp Lys Ala Lys Ile Glu Val Ile Asp Lys
    210   215   220
Leu Pro Pro Leu Val Asn Val Arg Gly Ile Arg Ser Phe Leu Gly His
225   230   235   240
Ala Arg Phe Tyr Arg Glx Phe Ile Lys Asp Phe Thr Lys Val
                245   250

<210> 144
<211> 761
<212> DNA
<213> Glycine max

<400> 144
gtgcggaagg aggtctttaa gttgctggaa gcaggcctta tttatcccat ttcggatagt 60
gcatgggtta gccctatgca agttgtccct aagaaaggag gtatgacagt cattaagaat 120
gataaagatg agttgatatc cacaaggacc gtcaccgggt ggagaatgtg cattgactat 180
cgaaagctga atgatgcacc cggaaggacc attatccact ccctttcatg ggccatatgc 240
ttgaaagact tgttgggcaa tcctattatt gttttctaga tggatattat ggttataatc 300
agattgttgt agatcccaaa gatcaagaga agacagcttt cacctaccct tttggtgtat 360
tcgcatatca gtgcatgcct tttggtctat gcaatgcccc agctacattt cagaggtgta 420
tgatggctat tttttctgat atggtggaaa tatgcattga agttttcatg gacgatttct 480
ctatttttgg gccatccttt gaagggtgct tatcaaatct tgaaaaagta ttaaagagat 540
gtgaagagtc caatctagtt ctcaattgga agaaatgcca tttcatggtt caagaaggaa 600
taatgttggg gcataaaatt tcagtaagag ggatagaggt ggacaaggca aagattgatg 660
taattgagaa actacttgct cccatgaatg tcaagggaat aagaagcttc ttaggacatg 720
cagggttcta caggcgattc ataaaagact tcaccaaagt t   761

<210> 145
<211> 254
<212> PRT
<213> Glycine max

<400> 145
Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Leu Ile Tyr Pro
 1   5   10   15
Ile Ser Asp Ser Ala Trp Val Ser Pro Met Gln Val Val Pro Lys Lys
            20   25   30
Gly Gly Met Thr Val Ile Lys Asn Asp Lys Asp Glu Leu Ile Ser Thr
        35   40   45
Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
    50   55   60
Asp Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Met Gly His Met
65   70   75   80
Leu Glu Arg Leu Val Gly Gln Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr
                85   90   95
Tyr Gly Tyr Asn Gln Ile Val Val Asp Pro Lys Asp Gln Glu Lys Thr
            100   105   110
Ala Phe Thr Tyr Pro Phe Gly Val Phe Ala Tyr Gln Cys Met Pro Phe
        115   120   125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
    130   135   140
Phe Ser Asp Met Val Glu Ile Cys Ile Glu Val Phe Met Asp Asp Phe
145   150   155   160
Ser Ile Phe Gly Pro Ser Phe Glu Gly Cys Leu Ser Asn Leu Glu Lys
                165   170   175
Val Leu Lys Arg Cys Glu Glu Ser Asn Leu Val Leu Asn Trp Lys Lys
            180   185   190
Cys His Phe Met Val Gln Glu Gly Ile Met Leu Gly His Lys Ile Ser
        195   200   205
Val Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys
    210   215   220
Leu Leu Ala Pro Met Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
225   230   235   240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245   250

<210> 146
<211> 762
<212> DNA
<213> Glycine max

<400> 146
gtgcgtaagg aggtggtcaa gttgcttgaa gtaggactaa tttatccaat ctctgatagt 60
gcttgggtga gttcgaacta ggtggtgcct aagaaaggtg gtatgacggt gatccacaat 120
gataagaatg atcttattcc tacacagaca atcattaggt ggcaaatgtg tattgactat 180
cacaagttga atgatgtcac caagaaggac cattttcctc tgccattcat ggaccaaatg 240
ttagagaggt tagctggcca agcttttttat tgtttttttgg atggttattc tgggtataac 300
caaatagcgg tgcatcttaa agatcaagag aagactacta tcatatgccc atttggtgtc 360
tttgcttaca gacaaatgtc atttgaactg tgtaatgccc ctaccacctt ctagagattc 420
atgatggcca tttttgctga ccttgtggag aaatgcatag aggtgttcat gaatgatttc 480
tctattttcg gctcttcctt ttatcattgt ttatccaacc tggaattagt gttacaacgg 540
tgtgcggaaa ccaatttgtt gatgaactgg gagaaatgtc atttcatggt ccaagagggg 600
attgtcttag gccacaagat ctcttccaga gggttggaag tggacaaggc aaaaattgat 660

gttattgaga agttgcctcc acctatgaat gtgaaaggca tccgaagttt tctcgaatat 720
gttggatttt ataggaggtt catcaaagac ttcacgaaag tt 762

<210> 147
<211> 254
<212> PRT
<213> Glycine max

<400> 147
Val Arg Lys Glu Val Val Lys Leu Leu Glu Val Gly Leu Ile Tyr Pro
1 5 10 15
Ile Ser Asp Ser Ala Trp Val Ser Ser Asn Glx Val Val Pro Lys Lys
20 25 30
Gly Gly Met Thr Val Ile His Asn Asp Lys Asn Asp Leu Ile Pro Thr
35 40 45
Gln Thr Ile Ile Arg Trp Gln Met Cys Ile Asp Tyr His Lys Leu Asn
50 55 60
Asp Val Thr Lys Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ala Gly Gln Ala Phe Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Ala Val His Leu Lys Asp Gln Glu Lys Thr
100 105 110
Thr Ile Ile Cys Pro Phe Gly Val Phe Ala Tyr Arg Gln Met Ser Phe
115 120 125
Glu Leu Cys Asn Ala Pro Thr Thr Phe Glx Arg Phe Met Met Ala Ile
130 135 140
Phe Ala Asp Leu Val Glu Lys Cys Ile Glu Val Phe Met Asn Asp Phe
145 150 155 160
Ser Ile Phe Gly Ser Ser Phe Tyr His Cys Leu Ser Asn Leu Glu Leu
165 170 175
Val Leu Gln Arg Cys Ala Glu Thr Asn Leu Leu Met Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205
Ser Arg Gly Leu Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys
210 215 220
Leu Pro Pro Pro Met Asn Val Lys Gly Ile Arg Ser Phe Leu Glu Tyr
225 230 235 240
Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 148
<211> 762
<212> DNA
<213> Glycine max

<400> 148
gtgcgtaagg aggttctcaa gcttttggag gttgggctca tatacctcat ctctgacagc 60
gcttgggtaa gcctagtaca ggtggctccc aagaaatgcg gaatgacagt ggtacaaaat 120
gagaggaatg acttgatacc aacacgaact gtcactggct agcggatgtg tatcgactac 180
tgcaagttga atgaagccac acggaaggac catttcccct tacctttcat ggatcagatg 240
ctggagaggc ttgcagggca ggcatactac tgtttcttgg atagatattc aggatacaac 300
caaatcgcgg tagaccccag agatcaggag aagatggcct ttacatgccc ctttggcgtc 360
tttgcttaca gaaggatgtc attcaggtta tgtaacgcac cagccacatt tcagaggtgc 420
atgctggcca ttttttcaga catggtggag aagagcatcg aggtatttat ggatgaattc 480
tcgatttttg gacccttatt tgacagttgc ttaaggaact tagagatggt actacagagg 540

tgcgtataga ctaacttggt actaaattag gaaaaatgtc atttcatggt tcgagaggga 600
atagtgatgg gccacaatat ctcagctaga gggattgagg ttgatcagac aaagatagac 660
gtcattgaga agttgccacc accactgaat gttaaaggcg tcagaagttt cttagggcat 720
gcaggtttct acaggaggtt cataaaagac ttcacaaagg tt 762

<210> 149
<211> 254
<212> PRT
<213> Glycine max

<400> 149
Val Arg Lys Glu Val Leu Lys Leu Leu Glu Val Gly Leu Ile Tyr Leu
1 5 10 15
Ile Ser Asp Ser Ala Trp Val Ser Leu Val Gln Val Ala Pro Lys Lys
20 25 30
Cys Gly Met Thr Val Val Gln Asn Glu Arg Asn Asp Leu Ile Pro Thr
35 40 45
Arg Thr Val Thr Gly Glx Arg Met Cys Ile Asp Tyr Cys Lys Leu Asn
50 55 60
Glu Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ala Gly Gln Ala Tyr Tyr Cys Phe Leu Asp Arg Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Arg Asp Gln Glu Lys Met
100 105 110
Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Ser Phe
115 120 125
Arg Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Leu Ala Ile
130 135 140
Phe Ser Asp Met Val Glu Lys Ser Ile Glu Val Phe Met Asp Glu Phe
145 150 155 160
Ser Ile Phe Gly Pro Leu Phe Asp Ser Cys Leu Arg Asn Leu Glu Met
165 170 175
Val Leu Gln Arg Cys Val Glx Thr Asn Leu Val Leu Asn Glx Glu Lys
180 185 190
Cys His Phe Met Val Arg Glu Gly Ile Val Met Gly His Asn Ile Ser
195 200 205
Ala Arg Gly Ile Glu Val Asp Gln Thr Lys Ile Asp Val Ile Glu Lys
210 215 220
Leu Pro Pro Pro Leu Asn Val Lys Gly Val Arg Ser Phe Leu Gly His
225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 150
<211> 761
<212> DNA
<213> Glycine max

<400> 150
gtgcgtaagg aggtttttaa gttgctggaa gcaggtctta tttatcccat ttcggatagt 60
gcatgggtta gccctgtgca ggttgtcccc aagaaagaag gtaagacagt cattaaggat 120
gaaaaggatg agttgatatc cacaaggact atcaccgggt ggagaatgtg cattgactat 180
cagaagctga atgatgccac ccggaaggac cattatccac tccctttcat ggaccaaatg 240
cttgaaagac ttgccgggca atcttattat tgttttctgg atggatattc tggttataat 300
cagattgatg tagatcccaa ggatcaagag aagactgctt tcacctaccc ttttggtgta 360
ttcgcctatc ggcgcatgcc ctttggtttg tgcaatgccc cagctacatt tcagaggtgt 420

atgatgacta ttttttctga tatggtggaa aaatgaattg aagttttcat ggacgatttc 480
tctatttttg ggccatcttt tgaagggtgc ttatcaaatc ttgaaagagt attaaagaga 540
cgtgaagagt ccaaactagt tctcaattgg gagaaatgcc atttcatggt tcaagaagga 600
atagtgtggg gcataaaatt tcagtaagag ggatagaggt ggacaaggca aagattgatg 660
taatagagaa actacctcct cccatgaatg tcaagggaat aagaagcttc ctaggacatg 720
cagggttcta caagcgattc atcaaagatt tcacaaaggt t 761

<210> 151
<211> 254
<212> PRT
<213> Glycine max

<400> 151
Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Leu Ile Tyr Pro
1 5 10 15
Ile Ser Asp Ser Ala Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
20 25 30
Glu Gly Lys Thr Val Ile Lys Asp Glu Lys Asp Glu Leu Ile Ser Thr
35 40 45
Arg Thr Ile Thr Gly Trp Arg Met Cys Ile Asp Tyr Gln Lys Leu Asn
50 55 60
Asp Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Met Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ala Gly Gln Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Asp Val Asp Pro Lys Asp Gln Glu Lys Thr
100 105 110
Ala Phe Thr Tyr Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Pro Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Thr Ile
130 135 140
Phe Ser Asp Met Val Glu Lys Glx Ile Glu Val Phe Met Asp Asp Phe
145 150 155 160
Ser Ile Phe Gly Pro Ser Phe Glu Gly Cys Leu Ser Asn Leu Glu Arg
165 170 175
Val Leu Lys Arg Arg Glu Glu Ser Lys Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205
Val Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys
210 215 220
Leu Pro Pro Pro Met Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240
Ala Gly Phe Tyr Lys Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 152
<211> 762
<212> DNA
<213> Glycine max

<400> 152
gtgcggaaag aggtattcaa gttactagag gcagggctca tctacccaat ttcagatagc 60
tcctgggtta gtccggttca agttgttcca aaaaaaggag ggatgacagt ggtaaaaaat 120
gatagaaatg agctaattcc tacaagaaga gtcaccagat ggagaatgtg tattgattat 180
aggaagctca atgaagccac aagaaaagac cattacccac ttcccttcat ggatcaaatg 240
cttaagagac ttgcaaggca atccttctac cgtttcttgg acggatactc aggttacaat 300

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cagattgcag tggatcctca ggatcaagaa aaaacagctt ttacatgtcc tttcagtgtt     360
tttgcttatc gccgcatgcc gttcggttta tgtaatgcct ctactacttt tcagagatgt     420
atgatggcaa tttttgatga catggtagag aaatgtattg aagtctttat ggatgatttt     480
tcgttctttg gtgcatcttt tggaaattgc ttagcaaatt tagagaaagt gttacaacgt     540
tgtgaaaaat ctaatttggt gcttaactgg gaaaaatgtc actttatggt acaagaaggt     600
attgtgctag gacacaaaat ctctaaaaga ggaattgagg tggttaaaga aaaactagat     660
gttattgata aacttccacc cccagttaat gtaaaaggca tacacagttt tttgggtcat     720
gttggatttt atcggcgatt cataaaggac ttcaccaaag tt                        762

<210> 153
<211> 254
<212> PRT
<213> Glycine max

<400> 153
Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Leu Ile Tyr Pro
 1               5                  10                  15
Ile Ser Asp Ser Ser Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
            20                  25                  30
Gly Gly Met Thr Val Val Lys Asn Asp Arg Asn Glu Leu Ile Pro Thr
        35                  40                  45
Arg Arg Val Thr Arg Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
    50                  55                  60
Glu Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Met Asp Gln Met
65                  70                  75                  80
Leu Lys Arg Leu Ala Arg Gln Ser Phe Tyr Arg Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Gln Asp Gln Glu Lys Thr
            100                 105                 110
Ala Phe Thr Cys Pro Phe Ser Val Phe Ala Tyr Arg Arg Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Ser Thr Thr Phe Gln Arg Cys Met Met Ala Ile
    130                 135                 140
Phe Asp Asp Met Val Glu Lys Cys Ile Glu Val Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Phe Phe Gly Ala Ser Phe Gly Asn Cys Leu Ala Asn Leu Glu Lys
                165                 170                 175
Val Leu Gln Arg Cys Glu Lys Ser Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195                 200                 205
Lys Arg Gly Ile Glu Val Val Lys Glu Lys Leu Asp Val Ile Asp Lys
    210                 215                 220
Leu Pro Pro Pro Val Asn Val Lys Gly Ile His Ser Phe Leu Gly His
225                 230                 235                 240
Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250

<210> 154
<211> 761
<212> DNA
<213> Glycine max

<400> 154
gtgcgtaaag aagttttgaa gctgctagaa gcagacctta tttatcccat ttcggatagt      60
acatgggtta gccctgtgca agttgtcccc gagaaaggag gtatgacagt cattaagaat     120
gataaagatg agttgatatc cacaaggact gtcaccgggt gagaatgtgc attgactatc     180
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ggaagctgaa tgatgccacc cagaaggacc attattcact ccctttcatg gaccagatgc     240
ttgaaagact tgccggacaa tcctattatt gttttctgaa tggatactct ggctataatc     300
agattgtggt agatcccaaa gatcaggaga aaactgcttt cacctgcctt tttggtgtat     360
ttgcatacaa gcgtatgcat tttggcttgt gtaatgctcc aactacgtgt cagaggtgta     420
tgatgactat tttttctggt atcgtggaaa aatgcattga acttttcatg gacgatttct     480
ctatttttgg gccatctttt gaaggctact tatcaaacct tgaaagagta ttacagagat     540
gtgaagagtc taatctagtt ctcaattggg agaaatgcca tttcatggtt caagaaggaa     600
tagtgctggg gcataaaatt tcagtaagag ggatagaggt ggacaaggca aagattgatg     660
taattgagaa actacctcct cccatgattg tcaagggaat aagaagcctc ctaggacatg     720
tagggttcta caggcgattc atcaaagact tcacaaaggt t                        761

<210> 155
<211> 254
<212> PRT
<213> Glycine max

<400> 155
Val Arg Lys Glu Val Leu Lys Leu Leu Glu Ala Asp Leu Ile Tyr Pro
 1               5                  10                  15
Ile Ser Asp Ser Thr Trp Val Ser Pro Val Gln Val Val Pro Glu Lys
            20                  25                  30
Gly Gly Met Thr Val Ile Lys Asn Asp Lys Asp Glu Leu Ile Ser Thr
        35                  40                  45
Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
    50                  55                  60
Asp Ala Thr Gln Lys Asp His Tyr Ser Leu Pro Phe Met Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Leu Ala Gly Gln Ser Tyr Tyr Cys Phe Leu Asn Gly Tyr
                85                  90                  95
Ser Gly Tyr Asn Gln Ile Val Val Asp Pro Lys Asp Gln Glu Lys Thr
            100                 105                 110
Ala Phe Thr Cys Leu Phe Gly Val Phe Ala Tyr Lys Arg Met His Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Thr Thr Cys Gln Arg Cys Met Met Thr Ile
    130                 135                 140
Phe Ser Gly Ile Val Glu Lys Cys Ile Glu Leu Phe Met Asp Asp Phe
145                 150                 155                 160
Ser Ile Phe Gly Pro Ser Phe Glu Gly Tyr Leu Ser Asn Leu Glu Arg
                165                 170                 175
Val Leu Gln Arg Cys Glu Glu Ser Asn Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195                 200                 205
Val Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys
    210                 215                 220
Leu Pro Pro Pro Met Ile Val Lys Gly Ile Arg Ser Leu Leu Gly His
225                 230                 235                 240
Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
                245                 250

<210> 156
<211> 762
<212> DNA
<213> Glycine max

<400> 156
gtgcgtaagg aggtttttaa gttgctggaa gcaggtctta tttatcccat ttcggatagt      60
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gcatgggtta gccctgtgca ggttgtcccc aagaaagaag gtaagacagt cattaaggat     120
gaaaaagatg agttgatatc cacaaggact atcaccgggt ggagaatgtg cattgactat     180
cagaagctga atgatgccac ccggaaggac cattatccac tccctttcat ggaccaaatg     240
cttgaaagac ttgccgggca atcttattat tgttttctgg atggatattc tggttataat     300
cagattgatg tagatcccaa ggatcaagag aagactgctt tcacctaccc ttttggtgta     360
ttcgcctatc ggcgcatgcc ctttggtttg tgcaatgccc cagctacatt tcagaggtgt     420
atgatgacta ttttttctga tatggtggaa aaatgaattg aagttttcat ggacgatgtc     480
tctatttttg ggccatcttt tgaagggtgc ttatcaaatc ttgaaagagt attaaagaga     540
cgtgaagagt ccaaactagt tctcaattgg gagaaatgcc atttcatggt tcaagaagga     600
atagtgttgg ggcataaaat ttcagtaaga gggatagagg tggacaaggc aaagattgat     660
gtaatagaga aactacctcc tcccatgaat gtcaagggaa taagaagctt cctaggacat     720
gcagggttct acaagcgatt catcaaagac ttctcaaaag tt                        762
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<210> 157
<211> 254
<212> PRT
<213> Glycine max

<400> 157

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Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Leu Ile Tyr Pro
 1               5                  10                  15
Ile Ser Asp Ser Ala Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
            20                  25                  30
Glu Gly Lys Thr Val Ile Lys Asp Glu Lys Asp Glu Leu Ile Ser Thr
        35                  40                  45
Arg Thr Ile Thr Gly Trp Arg Met Cys Ile Asp Tyr Gln Lys Leu Asn
    50                  55                  60
Asp Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Met Asp Gln Met
65                  70                  75                  80
Leu Glu Arg Leu Ala Gly Gln Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr
                85                  90                  95
Ser Gly Tyr Asn Gln Ile Asp Val Asp Pro Lys Asp Gln Glu Lys Thr
            100                 105                 110
Ala Phe Thr Tyr Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Pro Phe
        115                 120                 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Thr Ile
    130                 135                 140
Phe Ser Asp Met Val Glu Lys Glx Ile Glu Val Phe Met Asp Asp Val
145                 150                 155                 160
Ser Ile Phe Gly Pro Ser Phe Glu Gly Cys Leu Ser Asn Leu Glu Arg
                165                 170                 175
Val Leu Lys Arg Arg Glu Glu Ser Lys Leu Val Leu Asn Trp Glu Lys
            180                 185                 190
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
        195                 200                 205
Val Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys
    210                 215                 220
Leu Pro Pro Pro Met Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
225                 230                 235                 240
Ala Gly Phe Tyr Lys Arg Phe Ile Lys Asp Phe Ser Lys Val
                245                 250
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<210> 158
<211> 761
<212> DNA
<213> Glycine max

<400> 158
gtgcggaagg aggttcttaa gctcctggaa gcagggctca tctatcttat ctcagatagt 60
gttgggtgag tccagtgcat gtggttccca agaagggtgg gaagactgtg gtgagaaatg 120
agaaaaatga cctcattcta acccgaactg tcacaggatg gagaatgtgc atagattatc 180
ggaagttgaa tgatgccatc aagaaggatc acttccctct accattcata gatcagatgc 240
ttgagaggtt agcaagccag tctttctatt atttcttgga tgaatattct agatacaatc 300
agattgctat acatcccaag gaccaagaga agattgcatt tacatgccca tttggtgtct 360
ttgcctatag aaggatgcca tttgaactat gcaatgctcc agctaccttt tagaggcata 420
tgctagccat attcgctaac atggtggaga aatgcatcga agtgttcata gatgattttt 480
cggtgtttgg tccatccttt gtttgttgtt tgaccaattt agagctagtg ttgaagtact 540
gtgaggagac aaatttagta ttgaattggg agaaatgtca tttcatggtc caagaaggaa 600
ttatgttggg gcataaaatt tttgctagag gtattgaggt ggacaaggcc aaaattgatg 660
ttattgaaaa gctgcctcca ccagtcaatg taaaaggcat caggagtttt cttggacaca 720
ctggtttctt caggcgtttc atcaaggact tcacaaaagt t 761

<210> 159
<211> 254
<212> PRT
<213> Glycine max

<400> 159
Val Arg Lys Glu Val Leu Lys Leu Leu Glu Ala Gly Leu Ile Tyr Leu
1 5 10 15
Ile Ser Asp Ser Ala Trp Val Ser Pro Val His Val Val Pro Lys Lys
20 25 30
Gly Gly Lys Thr Val Val Arg Asn Glu Lys Asn Asp Leu Ile Leu Thr
35 40 45
Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
50 55 60
Asp Ala Ile Lys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ala Ser Gln Ser Phe Tyr Tyr Phe Leu Asp Glu Tyr
85 90 95
Ser Arg Tyr Asn Gln Ile Ala Ile His Pro Lys Asp Gln Glu Lys Ile
100 105 110
Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Pro Phe
115 120 125
Glu Leu Cys Asn Ala Pro Ala Thr Phe Glx Arg His Met Leu Ala Ile
130 135 140
Phe Ala Asn Met Val Glu Lys Cys Ile Glu Val Phe Ile Asp Asp Phe
145 150 155 160
Ser Val Phe Gly Pro Ser Phe Val Cys Cys Leu Thr Asn Leu Glu Leu
165 170 175
Val Leu Lys Tyr Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Gln Glu Gly Ile Met Leu Gly His Lys Ile Phe
195 200 205
Ala Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys
210 215 220
Leu Pro Pro Pro Val Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240
Thr Gly Phe Phe Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 160
<211> 762
<212> DNA

<213> Pisum sativum

<400> 160
gtgcgcaagg aagtactcaa gttgttagat tcgggaatga tttaccccat ttctgacagc 60
tcgtgggtaa gtccagtgca cgtggtacca aagaaaggag gaacctcagt aattttaaat 120
gaaaagaatg aactgatccc aactcgcaca gtgacagggt ggcgagtatg catcgatcac 180
agaagactga acacagcaac aagaaaggat cattttcctc tccctttat tgatcaaatg 240
ttagaaagac ttgcaggtca tgagtattat tgctttctgg atggatattc gggatacaat 300
caaattgttg tagccccgga agatcaggaa aaaactgcat ttacatgtcc ttatggtatt 360
ttcgcttaca gacggatgcc atttgggcta tgcaatgccc cagctacttt tcagaggtgt 420
atgacatcta tattctccga catgcttgaa aagtatatga aggtgtttat ggatgatttc 480
tctgtgtttg gttcttcttt tgataattgt ttagctaact tgtctcttgt tttgcaaaga 540
tgtcaggaaa ctaaccttgt tctcaattgg gagaaatgtc atttcatggt gcaggaagga 600
attgtgctag gacacaaaat ttcccacaaa ggaattgaag tggacaaagc caaagtggag 660
gttatagcta acctcccacc tccggtgaat gaaaaaggga taaggagttt tttgggtcat 720
gcaggttttt atcgcaggtt catcaaagac ttcacaaagg tt 762

<210> 161
<211> 254
<212> PRT
<213> Pisum sativum

<400> 161
Val Arg Lys Glu Val Leu Lys Leu Leu Asp Ser Gly Met Ile Tyr Pro
1 5 10 15
Ile Ser Asp Ser Ser Trp Val Ser Pro Val His Val Val Pro Lys Lys
20 25 30
Gly Gly Thr Ser Val Ile Leu Asn Glu Lys Asn Glu Leu Ile Pro Thr
35 40 45
Arg Thr Val Thr Gly Trp Arg Val Cys Ile Asp His Arg Arg Leu Asn
50 55 60
Thr Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ala Gly His Glu Tyr Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Val Val Ala Pro Glu Asp Gln Glu Lys Thr
100 105 110
Ala Phe Thr Cys Pro Tyr Gly Ile Phe Ala Tyr Arg Arg Met Pro Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Thr Ser Ile
130 135 140
Phe Ser Asp Met Leu Glu Lys Tyr Met Lys Val Phe Met Asp Asp Phe
145 150 155 160
Ser Val Phe Gly Ser Ser Phe Asp Asn Cys Leu Ala Asn Leu Ser Leu
165 170 175
Val Leu Gln Arg Cys Gln Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205
His Lys Gly Ile Glu Val Asp Lys Ala Lys Val Glu Val Ile Ala Asn
210 215 220
Leu Pro Pro Pro Val Asn Glu Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 162

<211> 762
<212> DNA
<213> Pisum sativum

<400> 162
gtgcgtaagg aggtctttaa actattggat gcgggaatga tttacccgat ctcggatagt 60
ccgtgggtta gtcccgtgca cgtggttccg aagaagggtg gaatgaccgt aatccgtaat 120
gacaaagacg aattgatccc gactaaagtt gcaacggggt ggagaatatg tatagattat 180
agacagttga ataccgcgac tcgaaaggac cattttccac tcccatttat ggatcaaatg 240
cttgaaagac tatcgggcca acaatactat tgtttcttgg acggctactc cgggtacaac 300
caaattgcgg ttgacccggt tgatcatgag aagacggctt tcacgtgtcc gtttggagtg 360
ttcgcataca gaaaaatgcc ctttgggctg tgcaatgcac cggcgacttt ccaacgatgc 420
gtcctagcca tttttgccga tctaatagag aaaacaatgg acgtcttcat ggatgacttc 480
tcggtatttg gtgggacgtt tagtctatgc ttggcaaatt tgaagacggt gttggaaagg 540
tgtgtgaaga ccaatttggt gctaaattgg gaaaagtgtc acttcatggt gaccgagggg 600
atcgtgctag gccacaaagt ctctaaaagg gggcttgaag tggatagagc taaggttgaa 660
gtaattgaaa aattaccccc tccggtgaat gtgaaaggca tccgtagctt tttggggcac 720
gcggggtttt accggcgctt cattaaagac ttctcaaaag tt 762

<210> 163
<211> 254
<212> PRT
<213> Pisum sativum

<400> 163
Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Met Ile Tyr Pro
1 5 10 15
Ile Ser Asp Ser Pro Trp Val Ser Pro Val His Val Val Pro Lys Lys
20 25 30
Gly Gly Met Thr Val Ile Arg Asn Asp Lys Asp Glu Leu Ile Pro Thr
35 40 45
Lys Val Ala Thr Gly Trp Arg Ile Cys Ile Asp Tyr Arg Gln Leu Asn
50 55 60
Thr Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ser Gly Gln Gln Tyr Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Val Asp His Glu Lys Thr
100 105 110
Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Lys Met Pro Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Val Leu Ala Ile
130 135 140
Phe Ala Asp Leu Ile Glu Lys Thr Met Asp Val Phe Met Asp Asp Phe
145 150 155 160
Ser Val Phe Gly Gly Thr Phe Ser Leu Cys Leu Ala Asn Leu Lys Thr
165 170 175
Val Leu Glu Arg Cys Val Lys Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Thr Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205
Lys Arg Gly Leu Glu Val Asp Arg Ala Lys Val Glu Val Ile Glu Lys
210 215 220
Leu Pro Pro Pro Val Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Ser Lys Val
245 250

<210> 164
<211> 762
<212> DNA
<213> Pisum sativum

<400> 164
gtgcggaagg aggtctttaa attgttggat gcggggatga tttacccgat ctcggatagt 60
ccatgggtta gtcctgtgca cgttgttccg aagaaggggg ggattaccgt aatccggaat 120
gacaaggatg aattgatccc cactaaagtt gaaacggggt ggagaatgtg tattgattat 180
aggcggttga ataccgcgac tcgaaaagac cattttccac tcccatttat ggatcaaatg 240
ctcgaaagac tatcgggcca acaatattat tgtttttttgg acggctactc cgggtacaac 300
caaattgcgg ttgacccggc cgatcatgag aagacggctt tcacatgtcc gtttggagtg 360
ttcgcatacc gaaaaatgcc ctttgggctg tgcaatgcac cggcgacctt ccaacgatgt 420
gtccaagcca tttttgtcga tctgatagag aaaacaatgg aagtcttcat ggatgacttc 480
tcggtatttg gtgggtcttt tagtctatgc ttggcgaact tgaaaacggt gttggagaga 540
tgtgtgaaga ccaatttggt gcttaattgg gagaagtgtc acttcatggt gaccgagggg 600
atcgtgctag gccacaaagt ctctagaagg gggcttgaag tggatagagc taaggttgaa 660
gtgatagaaa aattacctcc tccggtgaat gtgaagggca tccgaagctt tttggggcac 720
gccgggttct accggcgctt cattaaagat ttcacaaagg tt 762

<210> 165
<211> 254
<212> PRT
<213> Pisum sativum

<400> 165
Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Met Ile Tyr Pro
1 5 10 15
Ile Ser Asp Ser Pro Trp Val Ser Pro Val His Val Val Pro Lys Lys
20 25 30
Gly Gly Ile Thr Val Ile Arg Asn Asp Lys Asp Glu Leu Ile Pro Thr
35 40 45
Lys Val Glu Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Arg Leu Asn
50 55 60
Thr Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
65 70 75 80
Leu Glu Arg Leu Ser Gly Gln Gln Tyr Tyr Cys Phe Leu Asp Gly Tyr
85 90 95
Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Ala Asp His Glu Lys Thr
100 105 110
Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Lys Met Pro Phe
115 120 125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Val Gln Ala Ile
130 135 140
Phe Val Asp Leu Ile Glu Lys Thr Met Glu Val Phe Met Asp Asp Phe
145 150 155 160
Ser Val Phe Gly Gly Ser Phe Ser Leu Cys Leu Ala Asn Leu Lys Thr
165 170 175
Val Leu Glu Arg Cys Val Lys Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190
Cys His Phe Met Val Thr Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205
Arg Arg Gly Leu Glu Val Asp Arg Ala Lys Val Glu Val Ile Glu Lys
210 215 220
Leu Pro Pro Pro Val Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 166
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated oligonucleotide

<221> misc_feature
<222> 6, 15, 16, 18
<223> n = A,T,C or G

<400> 166
gtgcgnaarg argtnntnaa ryt 23

<210> 167
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> plant retroelement sequence

<400> 167
Val Arg Lys Glu Val Leu Lys Leu
1 5

<210> 168
<211> 24
<212> DNA
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<221> misc_feature
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<223> n = A,T,C or G

<400> 168
aacyttngwr aartcyttda traa 24

<210> 169
<211> 8
<212> PRT
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<220>
<223> plant retroelement sequence

<400> 169
Val Lys Ser Phe Asp Lys Ile Phe
1 5

<210> 170
<211> 20
<212> DNA
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<220>
<223> primer

<400> 170
gggatccgca attagaatct 20

<210> 171
<211> 20
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<220>
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<400> 171
cgaattcggt ccacttcgga 20

<210> 172
<211> 24
<212> DNA
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<220>
<223> primer

<400> 172
ccacaagatt ctaattgcgg attc 24

<210> 173
<211> 24
<212> DNA
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<220>
<223> primer

<400> 173
ccgaaatgga ccgaacccga catc 24

<210> 174
<211> 24
<212> DNA
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<220>
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<400> 174
tttccaggct cttgacgaga tttg 24

<210> 175
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<212> DNA
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<220>
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<400> 175
cgactcgagc tccatagcga tg 22

<210> 176
<211> 24
<212> DNA
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<220>
<223> primer

<400> 176
cggattgggc cgaaatggac cgaa 24

<210> 177
<211> 18
<212> DNA
<213> Arabidopsis thaliana

<400> 177
gaggacttgg ggggcaaa 18

<210> 178
<211> 13
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<220>
<223> exemplary motif

<221> VARIANT
<222> 2-3, 5-7, 9-12
<223> Xaa = Any Amino Acid

<400> 178
Cys Xaa Xaa Cys Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Cys
1 5 10

<210> 179
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary motif

<400> 179
Leu Ile Asp Leu Gly Ala
1 5

<210> 180

<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence

<400> 180
Lys Thr Ala Phe
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<210> 181
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence

<221> VARIANT
<222> 2
<223> Xaa = Pro or Ser

<400> 181
Met Xaa Phe Gly Leu Cys Asn Ala
 1   5

<210> 182
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence

<221> VARIANT
<222> 1
<223> Xaa = Val, Ile, or Met

<221> VARIANT
<222> 9
<223> Xaa = Ser or Trp

<221> VARIANT
<222> 10
<223> Xaa = Val or Ile

<400> 182
Xaa Glu Val Phe Met Asp Asp Phe Xaa Xaa
 1   5   10

<210> 183
<211> 19
<212> PRT
<213> Artificial Sequence

<220>

<223> consensus sequence

<221> VARIANT
<222> 12
<223> Xaa = Ile or Val

<400> 183
Phe Glu Leu Met Cys Asp Ala Ser Asp Tyr Ala Xaa Gly Ala Val Leu
 1   5   10   15
Gly Gln Arg

<210> 184
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence

<221> VARIANT
<222> 4
<223> Xaa = Thr or Ile

<221> VARIANT
<222> 8
<223> Xaa = Leu or Met

<221> VARIANT
<222> 13
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 15
<223> Xaa = Leu or Phe

<221> VARIANT
<222> 19
<223> Xaa = Arg or Lys

<221> VARIANT
<222> 23
<223> Xaa = Ile or Val

<221> VARIANT
<222> 26
<223> Xaa = Arg or Lys

<400> 184
Tyr Ala Thr Xaa Glu Lys Glu Xaa Leu Ala Ile Val Xaa Ala Xaa Glu
 1   5   10   15
Lys Phe Xaa Ser Tyr Leu Xaa Gly Ser Xaa Val
            20   25

<210> 185
<211> 46
<212> PRT

<213> Artificial Sequence

<220>
<223> consensus sequence

<221> VARIANT
<222> 4, 6-7, 11-40, 43
<223> Xaa = Any Amino Acid

<400> 185
His Cys His Xaa Ser Xaa Xaa Gly Gly His Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Asp Xaa Cys Gln Arg
        35   40   45

<210> 186
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence

<221> VARIANT
<222> 6
<223> Xaa = Ile, Val, or Met

<400> 186
Trp Gly Ile Asp Phe Xaa Gly Pro
 1   5

<210> 187
<211> 11
<212> PRT
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<220>
<223> consensus sequence

<221> VARIANT
<222> 7
<223> Xaa = Any Amino Acid

<221> VARIANT
<222> 10
<223> Xaa = Ala or Val

<400> 187
Pro Tyr His Pro Gln Thr Xaa Gly Gln Xaa Glu
 1   5   10

<210> 188
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> consensus sequence

<221> misc_feature
<222> 11, 12
<223> n = A,T,C or G

<400> 188
atttggggra nnt 13

<210> 189
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence

<221> VARIANT
<222> 5, 8
<223> Xaa = Arg or Lys

<400> 189
Gln Met Ala Ser Xaa Lys Arg Xaa Ala
1 5

<210> 190
<211> 6
<212> PRT
<213> Pisum sativum

<400> 190
Ala Ser Lys Lys Arg Lys
1 5